

Vladimir Beshanov

Stalin is the undertaker of the Red Army. The main culprit of the Catastrophe of 1941

VLADIMIR

} % Mouth . x  
yy; AND  
TIV

UNDERTAKER  
\_ RED  
ARMY

THE MAIN CAUSER OF THE CATASTROPH OF 1941

Vladimir Beshanov  
Stalin - the undertaker of the Red Army. The main culprit of the Catastrophe of 1941

"Fought on the" coffins "!" The decline in the tank troops"

Foreword

Cruelty, hatred and injustice cannot and will never be able to create anything eternal, neither intellectually nor morally nor materially.  
Pitirim Sorokin

The leader of the "proletarian revolution" in Russia, Vladimir Ilyich Lenin, was not an intellectual, although he was of noble origin and called himself a writer in questionnaires. According to Marxist schemes, there were two main irreconcilably hostile classes in the ecumene - the proletariat and the bourgeoisie. The first was the future, his people were destined to become the hegemon, the gravedigger of capitalism and establish an iron dictatorship over the entire globe. The second class has long turned into a brake on the path of progress; in fact, it was reactionary, exploitative and subject to total liquidation, regardless of gender and age.

The intelligentsia unequivocally belonged to the bourgeoisie, "by virtue of the whole situation of social life" from which it arose. She was also "rotten-liberal". For clarity: the Bolsheviks attributed to the intelligentsia all mental workers who did not have a party card.

In addition, at least Ilyich himself divided the intelligentsia into two

categories. The first included philosophers, historians, economists, sociologists, philologists, mathematicians, writers, composers, astronomers, lawyers, theorists of all stripes, who thought abstractly, without relying on Marx and Engels, philosophers, historians, economists, writers, theorists of all stripes, simply thinking educated people, defined by one capacious Leninist word - "shit".

The Soviet government got rid of this ballast resolutely and with the most "frantic energy": they were shot in basements, ravines and right on the streets, they hammered nails into their skulls, choked them with hunger, terrorized them with searches, requisitions, "seals", preventive arrests, interrogations and labor service, they made it clear in every possible way that there was no place for them in the coming communist paradise: "This social group has outlived its time." Only from March 1918 to February 1919, seven full members of the Russian Academy of Sciences died of cold and hunger, and there were just over forty of them. At the very beginning of 1920, out of desperation, V.M. Khvostov - who needed him with his research in the field of ethics. In the Imperial Moscow University, 12 professors died during the 1919/20 academic year. From

memories of M.M. Novikova: "I remember how A.N. Sabanin, one of ... the founders of soil science, weakened from malnutrition, slipped in the street, fell, was brought to his apartment and soon died of injuries ...

Once I was informed about the death of a professor of physiology, a favorite of student youth L.Z. Morokhovets, and I found his body lying on boxes, in a shed in the backyards... The funeral of these honored workers of science presented a pitiful picture. On a simple, rumbling cart, a modest coffin was transported to the cemetery.

In January 1920, the People's Commissariat of Education became generous and released 1977 food rations to the Academy of Sciences - for 397 still living scientists.

The exception was individual cultural figures who "sympathized" with the cause of the working class. But these did not last long. Fedor Chaliapin wrote to the People's Commissar of Education A.V. Lunacharsky: "I treat searches with understanding. But why does it have to be at night? I'm uncomfortable!"

The Russian Physical and Chemical Society, in connection with the mass arrests of scientists, appealed to the Soviet government with a request to release Professor M.M. Tikhvinsky and other scientists who were included in the list of "enemies of the people". Lenin instructed his secretary to send a request to the Cheka, while noting that Tikhvinsky was not arrested by chance: "Chemistry and counter-revolution do not exclude each other." The Word of the Leader is a guide to action. The chemist Tikhvinsky was shot on August 21, 1921 as a member of the Petrograd Combat Organization, almost simultaneously with a member of the same organization, the poet N.S. Gumilyov.

The bullet had a fashionable coinage  
And the brain did not flow out, but was thrown out in a lump ...

According to far from complete data, in three years Russia has lost 17,000 figures of science, culture and art. When in the summer of 1921 in Prague

Since the first academic congress of emigre scientists took place, about 500 Russian scientists took part in it.

After the Civil War, world-famous scientists were "humanely" thrown out of the country. And so that the thought does not arise to return, V.I. In May 1922, Lenin proposed to the People's Commissar of Justice in the new Criminal Code of the RSFSR "to add execution for an unauthorized return from abroad", which was strictly executed. At the same time, before the leader of the Chekists, F.E. Dzerzhinsky was tasked with "catching the molesters of student youth" and systematically deporting them abroad. A little later, Iron Felix issued a directive: "There must be a case for every intellectual."

On August 10, 1922, the All-Russian Central Executive Committee issued a decree "On Administrative Exile", on the basis of which the Special Commission was granted the right to expel "persons involved in counter-revolutionary actions" abroad or to remote areas of the RSFSR without trial or investigation. The Commission immediately took up its duties. Already in the same August, she sent 160 people from among the intelligentsia beyond the cordon, who tried to defend their opinion. Among them was the rector of Moscow University, an outstanding zoologist, Professor M.M. Novikov and Rector of Petrograd University,

historian and poet, Professor L.P. Karsavin.

The Chekists came up with the most diverse grounds for arrest and subsequent expulsion: "politically suspicious", "ideologically harmful", "type, undoubtedly harmful in all respects", "has a connection with the princes of the church", "outwardly loyal, but, in essence, extremely harmful" and even "enjoys enormous authority."

On September 30, the German steamer Oberburgomaster Haken delivered the first group of exiles to the city of Stettin. November 18 "Prussia" brought to a foreign land the second group of repressed Russians. Historians S.P. were thrown out of the "homeland of the victorious proletariat". Melgunov (he was sentenced to death two years earlier, but released at the request of the legendary revolutionaries Vera Figner and Prince P.A. Kropotkin), V.A. Myakotin, A.A. Kizevetter, A.V. Florovsky, professor of Moscow Higher Technical School V.I. Yasinsky, "the best specialist in sugar business and technology of organic substances in Russia", professor of the Petrograd Agronomic Institute E.L. Zubashev.

The same fate befell a large group of mathematicians headed by the famous astrophysicist, inventor of the astrograph, founder and director of the Russian Astrophysical Institute, dean of the Faculty of Physics and Mathematics of Moscow State University, Professor V.V. Stratonov and Professor of Petrograd University D.F. Selivanov (during interrogation, he learned that his crime was "in the bourgeois method of teaching mathematics").

Under special control exercised personally by Lenin (in between paralytic seizures), "White Guard philosophers" were expelled from the country who did not appreciate the genius of "Marxism and empirio-criticism": Nikolai Berdyaev, Ivan Ilyin, Nikolai Lossky, Semyon Frank, Vasily Zenkovsky, Sergey Trubetskoy, Ivan Lapshin, Boris Vysheslavtsev, Lev Shestov. On the train "Moscow - Riga" they were overtaken by a well-known economist and statistician, the former Minister of Food of the Provisional Government A.V. Peshekhonov and professor

Department of Sociology of Petrograd University P.A. Sorokin. The latter, being one of the main editors of the Socialist-Revolutionary newspapers "The Cause of the People" and "The Will of the People", the author of the classic "System of Sociology" translated into many languages and the work "The Influence of Hunger on Human Behavior, Social Life and the Organization of Society", relevant to Soviet Russia, brazenly opposed the Bolsheviks: "You are traitors to the Motherland and the revolution. Traitors to the Motherland because with your own hands you open the way for the hordes of the German emperor. Traitors of the revolution because they have ruined and are ruining it. The revolution is not with you. If you were revolutionaries, why are all revolutionary democracies not with you? With you - only dark gangs.

In December, the Italian steamer Zhanna delivered Ukrainian exiles from Odessa to Constantinople: a student of Ivan Pavlov, professor of physiology at Novorossiysk University B.P. Babkin, historian E.P. Trefilyev, surgeon A.F. Duvan-Khadzhi, jurist A.S. Mumokin, forensic doctor D.D. Krylov, jurist P.A. Mikhailov, linguist F.G. Aleksandrov, zoologist S.A. Sobol, Kyiv academicians S. Efimov and Korchak-Chepurkovsky and others.

In total, in the summer - autumn of 1922, 225 representatives of "free" professions, unnecessary to the Soviet country, were expelled from the country. Before leaving, each dispossessed gave a signature with the following content:

"This subscription is given to gr. Aikhenvald of the GPU that I undertake not to return to the territory of the RSFSR without the permission of the Soviet authorities (Article 71 of the Criminal Code of the RSFSR, punishing for unauthorized return to the RSFSR with capital punishment, was announced to me), which I sign.

It was allowed to take only 5 English pounds with you on the road, and from things - two items of each item. On landing, security officers took away wedding rings and pectoral crosses.

Ilyich, who had never worked anywhere and made his living in emigration by irregular donations to the party fund and expropriations, believed that all these intellectuals unsuited to life in the "world of a chistogan" would slowly wither away from lack of money and nostalgia. Well, if someone dares to return, they will immediately shoot him. From such pleasant thoughts, the Leader felt noticeably better, which was noted even by the attending physicians.

By this time, the "most talented poet of Russia" A.A. Blok, kicked out to Italy - "to get treated in a good sanatorium" - who imagined a lot about himself, wrote "filthy letters" to the Kremlin about the vileness and criminality of the Bolshevik terror "petrel" A.M. Gorky. The writers Ivan Bunin and Dmitry Merezhkovsky emigrated without waiting for arrest, experiencing an organic disgust for the new system (the authorities entrusted him with a speech about the "Decembrists" in the Winter Palace, but the speaker escaped: "I had to glorify the martyrs of Russian freedom in the face of freedom killers. If those five hanged men had been resurrected, they would have been hanged again, under Lenin, just as under Nicholas the First"), Vladislav Khodasevich and Marina Tsvetaeva, Alexander Kuprin and Ivan Shmelev, composers Igor Stravinsky and Sergei Rachmaninov, artists Marc Chagall and Vasily Kandinsky, head of the Department of Mathematics at the Polytechnic Institute Yakov Tamarkin, who became a professor at Brown University in the USA, and the future world chess champion Alexander Alekhin...

Great F.I. Chaliapin, who donated royalties from concerts to the children of Russian emigrants, was deprived of Soviet citizenship and the title of People's Artist.

Behind the backs of the exiles, the "smoke of the Fatherland" rose like a stinking poisonous mushroom. This is under the leadership of the chairman of the Glavpolitprosveta N.K. Krupskaya, Ilyich's fighting girlfriend, thousands of books were burned all over Russia. Everything in a row - books on psychology, philosophy, history and ethics, books on religious education and primers, the Bible and the Gospel, the Koran and the Talmud, novels and detective stories; they turned "vulgar humor" and "petty-bourgeois fiction" into ashes, burned volumes of Tolstoy and Dostoevsky, the works of Plato, Descartes, Kant, Schopenhauer. Even "Russian folk tales" turned out to be "hostile to advanced ideas." In a short list of works recommended for reading by the proletarians are the pamphlets "World October", "We Will Finish the Enemy with Weapons" and "Destroy the Louse". A new generation of people, the builders of communism, was to grow up on this "literature" and Lenin's revelations.

IN AND. Lenin indefatigably hated the whole world around him, everything and everyone (with the exception of his late mother, Maria Alexandrovna). With especially fierce hatred, the Chairman of the Council of People's Commissars burned with clergymen, whose teachings - "opium for the people, a kind of spiritual fuselage in which the slaves of capital drown their human dignity -" were across

revolution as a quiet bitch." At the dawn of his youth, Volodya Ulyanov frantically trampled on his pectoral cross with his feet. On the threshold of the grave, the brain of Vladimir Lenin, devoured by syphilis, gave birth to a cannibalistic instruction: "Make a secret decision of the congress that the seizure of valuables, especially the richest laurels, monasteries and churches, should be carried out with merciless determination, of course, without stopping at anything and in the shortest possible time. The more representatives of the reactionary bourgeoisie and reactionary clergy we manage to shoot on this occasion, the better."

Of course, everything "succeeded".

Particularly prominent figures of science, in order to amass foreign policy capital, were kept "for showcases", they were given food and categorically not allowed to go abroad. For example, the world famous physiologist, the first and only Nobel laureate in the country, Academician I.T. Pavlov, who scientifically proved that a person is only a set of conditionally unconditioned reflexes. Despite the fact that the academician did not hide his dislike for the Soviet power, defining it as "the worst kind of gendarmerie arbitrariness of the past, brought to unheard of exaggerated limits." In his message addressed to Lunacharsky, he wrote, in particular:

"And now, as an old-time experimenter of life, albeit an elementary one, I am deeply convinced that the social experiment being carried out over Russia is doomed to indispensable failure and will result in nothing but the political and cultural death of my homeland ...

Then I will not want to and will not be able to transform myself into a socialist or a communist, i.e. to give up everything of one's own, to become a serf slave of others.

Pavlov was returned the requisitioned gold medals from him, issued a "special ration", granted the apartment he occupied for life and forgave everything, justifying the "counter-revolutionary" habit of openly expressing his thoughts, without regard to the decisions of the Council of People's Commissars, with the political infancy of an eccentric old man who did not understand "class antagonism."

Few had such "luxurious conditions". One can recall the composers A.K. Glazunov (director of the Petrograd Conservatory) and N.K. Medtner (professor of the Moscow Conservatory), on the example of which the authorities demonstrated "an illustration of concern for culture." However, the musicians, who were forced to earn a living by organizing all kinds of amateur performances and accordion competitions, did not appreciate the care, at the first opportunity they left for foreign tours, and never returned.

"Thrown into the European dump" scientists and cultural figures, one might say, were lucky. They lived and worked in freedom, many succeeded, published works, literary and musical works that glorified their names in the civilized world, became laureates, made major discoveries and created scientific schools, headed departments of the most prestigious universities in Europe and America. Almost every one of these people could be written in a separate book.

Looking at the joyful reaction of Europe, the Kremlin realized it and decided that it would still be more correct to send scientists "to remote

terrain." Even more reliable - a bullet in the back of the head.

So, as candidates for deportation abroad, the defendants of the "additional list" were under arrest: Professors P.A. Velikhov, N.R. Brilling, P.I. Palchinsky, N.A. Izgaryshev, T.P. Kravets, I.I. Kukolevsky, N.D. Tyapkin, A.A. Rybnikov, N.P. Oganovsky. But they never got a ticket for the boat. Physicist Kravets and specialist in hydraulics Tyapkin were caulked to Siberia for three years. The rest, having had their fair share of interrogations, were released and allowed to work. And they worked. Not for fear, but for conscience, because they did not know how to live differently. For example, Vice-Rector of the Moscow Institute of Transport Engineers, a specialist in structural mechanics, a world-famous bridge builder P.A. Velikhov for six years (between the third and fourth "landings") managed to publish the works "Theory of Engineering Structures", "Theory of Elasticity" and "A Short Course in Structural Mechanics".

Then Comrade I.V. Stalin declared that the class struggle would only "intensify" as one moved towards communism. The unfinished professors were exterminated along the way as "pests" and "enemies of the people" - another Leader and another new speech.

In April 1928, he was arrested and a year later, quietly, without trial, Professor P.I. Palchinsky. He was neither a philosopher nor a lawyer - the owner of professions that were completely worthless in the Soviet Union, he was a geologist, the largest specialist in the field of mining economics and the production of building materials, and a permanent consultant to the State Planning Commission.

Since 1929, the OGPU has been promoting the "Academic Case", as a result of which, out of court, to various terms of imprisonment and

links were sentenced to 29 people, the elite of Russian historians, including the director of the Institute of Russian Literature Academician S.F. Platonov (died in exile in 1933), Professor of Moscow University Academician E.V. Tarle, Director of the Museum of Palaeography Academician N.P. Likhachev, Director of the Ancient Storage Academician M.K. Lyubavsky (died in exile in 1936), literary critic, curator of the Pushkin House N.V. Izmailov, orientalist, ethnographer and linguist A.M. Mervart (died in custody in 1932), S.V. Rozhdestvensky (died in exile in 1934), Yu.V. Gauthier, S.V. Bakhrushin, D.N. Egorov (died in exile in 1931), Byzantinist V.N. Beneshevich (shot in 1938) and others, 128 full-time employees of the Academy of Sciences were fired from their jobs.

And how could such a grandiose provocation of the authorities as the process of the "Industrial Party" and the "industrial affairs" related to it could do without the participation of intellectuals. In one of these cases - "On the wrecking and espionage organization in the central administration of highways and unpaved communications" - was arrested and shot in May 1930 by Professor P.A. Velikhov. Once again, they took and slapped the term on the largest specialist in the field of engine building, Professor N.R. Brilling. In the case of the mythical "Labor Peasant Party", a prominent economist, director of the Market Institute N.D. was convicted and sent to prison. Kondratiev (he was already sentenced to death in 1920, and in 1938 he was finally sentenced and shot in the Suzdal detention center), member of the commission of the People's Commissariat of Finance, professor L.N. Yurovsky (again convicted and shot in the Suzdal prison in 1937), professor at the Timiryazev Agricultural Academy, economist-geographer A.A.

Rybnikov (released, arrested again and shot in 1937) and professor of the same academy, the first agrophysicist in Russia A.G. Doyarenko, member of the Presidium of the State Planning Committee of the USSR, statistician V.G. Groman (died in prison in 1932), sociologist and social anthropologist A.V. Chayanov (again convicted and shot in 1937), agricultural economist N.P. Oganovsky (again convicted and shot in 1938), political economist Ya.M. Bukshpan (released ahead of schedule, arrested again and shot in 1939).

In 1936-1937, N.I. Yezhov took up astronomers, physicists and geophysicists. More than a hundred people were involved in the so-called "Pulkovo case". Director of the Pulkovo Observatory B.P. Gerasimov, scientific secretary of the observatory M.M. Musselius, Head of the Department of Solid State Physics of Kharkov University L.V. Shubnikov, Kharkov physicists A.N. Rozenkevich and V.S. Gorsky. The director of the Astronomical Institute B.V. Numerov (and was shot in prison), sentenced to five years, the founder of the Sun Service, Professor E.Ya. Perepelkin (also shot in places of detention) and by the age of eight, director of the Ukrainian Institute of Physics and Technology I.V. Obreimov, on the "top ten" slapped doctors of physical and mathematical sciences, professors of Leningrad University V.K. Frederiks (died in prison), V.R. Bursianu (died in prison), Yu.A. Krutkov, P.I. Lukirsky, etc., it. d., it. d.

And how many, unknown to anyone, only dreaming of discoveries, were destroyed without any "case", according to lists, for alien social origin, guided by a "healthy sense of class hostility", on a national basis.

The second category of intelligentsia included engineers, technicians, employees, production organizers, railway workers,

telegraph operators, the military - "specialists", according to Lenin's qualifications. Ideally, they should also be immediately put into consumption, and they were put into consumption at any opportunity. However, Lenin understood that in the 20th century, "without the guidance of specialists from various branches of knowledge, technology, and experience, the transition to socialism is impossible." At first, the Bolsheviks had to attract specialists to their side "in a bourgeois way", in other words, to promise them a good salary. But, firstly, "paying tribute to the bourgeoisie", even in the form of wages (only until the proletariat learns the highest technique of labor), was contrary to communist principles, and secondly, Ilyich believed that high salaries corrupt people - to work everyone should go for a bread ration, and the engineer's ration should not exceed that of the average worker. This period did not last long. As soon as the new government got a little stronger, the "specialists" were put on a bread card. Those who did not want to serve the cause of the proletariat, or those whose services were not required, were left without food or killed as "saboteurs" and class enemies. "We starved the intelligentsia to work," L.D. was proud. Trotsky. "Military experts" in the Red Army, diplomats who worked abroad, were informed that "his betrayal and betrayal would entail the arrest of his family and that, therefore, he thus assumes responsibility for the fate of his family." In addition, the loyalty of the former tsarist officers was monitored and held responsible by the commissars: "The commissar is the muzzle of a pistol put to the temple of the commander!" In 1918, according to Trotsky, "76% of the entire command and administrative apparatus

were represented by former officers of the tsarist army and only 12.9% consisted of young red commanders, who, naturally, occupied lower positions.

In the end, using merciless terror and promises of universal equality, the mobilization of all resources combined with unparalleled ferocity, an iron organization based on the basest instincts, slogans of self-determination of nations and discord in the enemy camp, which allowed them to beat them in turn, the Bolsheviks won the Civil War. The "Moors" who had done their job were removed from the historical stage.

In 1921-1922, during the period of the reduction of the Red Army, the "old-mode" generals and colonels were quietly escorted to teaching. In 1924, they were expelled from educational institutions and dismissed from the army; in 1930-1931, the survivors were arrested on charges of a monarchist conspiracy, including such prominent military experts and scientists as A.N. Snesarev, A.A. Svechin, A.Kh. Bazarevsky, N.E. Kakurin. Many were shot. In 1937-1938, those who did not have time to die a natural death were finished off - A.A. Svechina, P.P. Sytin.

Just as purposefully, the Soviet government harassed a small tribe of "bourgeois engineers." It was convenient to write off accidents and malfunctions in production that arose as a result of illiterate operation of equipment, explosions in mines, failures in the economy. In the economy - "wrecking", "economic counter-revolution".

At the beginning of 1928, the OGPU fabricated the Shakhty case, under which 53 people were arrested in the Donbass - mining engineers, technicians, mechanics, who allegedly committed villainy in the coal industry



under the direct supervision of the Paris Center and were agents of French, Polish and English capital. In the course of an open trial, 11 people were sentenced to death, 37 were sentenced to various terms of imprisonment. Over 2,000 people were arrested in 1929-1930 in cases related to the "Industrial Party", mainly scientific and technical intelligentsia.

In the memoirs of I.Ya. Mandelstam we read: "People were filmed in layers, by category: churchmen, mystics, scientists, idealists ... people who had legal, state or economic ideas." The cultural layer in the vast agrarian country was thin, Russia quickly grew wild and slipped into the Middle Ages. Her brain was burned out and her conscience was amputated; her diagnosis in the 20th century was gangrene.

As in any tyranny, the bet was made on mediocrity, incompetence, lack of initiative, diligence.

Managers were replaced by nominees with "lower

education", to replace the "bourgeois professors" - "red professors", who considered Marxism-Leninism the main science, to replace the professional military - "red marshals" and "red

commanders", who did not know how to read the map, but who thoroughly studied the structure of the horse. "Spetsov" was to be replaced by a new Soviet intelligentsia with a certificate of political loyalty in their pockets, love for the party of Lenin-Stalin in their hearts and a fanatical fire in their eyes. As early as April 1918, a program of proletarianization of universities began to be implemented. To start in August of the same

year, a separate decree abolished the need for secondary education. From now on, anyone who has reached the age of 16 could simply come to a higher educational institution. All types of entrance exams were canceled, it was not even necessary to be able to read and write. The new students were formed according to the class principle: the doors of any universities were wide open for the "working people", persons of "non-proletarian origin" were accepted with restrictions.

Accordingly, curricula had to be adapted to the level of catastrophically illiterate contingent. At the same time, the "conscious masses" often decided for themselves what they needed to learn, and what they "don't give a damn about". If Fourier series, vector algebra or probability theory do not fit in the heads of the "hegemon", then either these sciences are "bourgeois", or the old-fashioned professor teaches students by "bourgeois methods". The problem was solved delightfully simply: an incomprehensible section was thrown out of the program or a professor was thrown out of the university. So, at the Moscow Higher Technical School, a course on the strength of materials was withdrawn from the program; faculties of physics and mathematics were completely abolished in a number of universities. As "obsolete and useless for the dictatorship of the proletariat," the faculties of law, history, history and philosophy were liquidated. At the same time, such obligatory disciplines as historical materialism, the proletarian revolution, and the development of social forms were introduced.

From the history of Moscow State University: "The next decade was probably the most

tragic in the history of Moscow University. Introduced as the main "brigade-laboratory method" of training with the simultaneous complete cancellation of lectures, led to a catastrophic decrease in the level of training of specialists. Student teams of 3-5 people independently "worked through" the material being studied, while exams were replaced by collective reports, and theses were also canceled. Fundamental science was declared unnecessary, the university was supposed to provide a minimum of theoretical knowledge, preparing practitioners of an extremely narrow profile.

The leaders of the Soviet education system themselves admitted that "universities train "defective" engineers and doctors, and their defectiveness is not noticeable because these engineers do not build anything, and doctors work in the conditions of epidemics that mow down people." Engineers building nothing, doctors who do not treat anyone, military men who do not know how to fight - all this has become another Soviet tradition. However, the ideologists of the party understood what they were doing. Enlightenment was fraught with a threat to dictatorship, and already a new tribe, chanting "Lenin is our mother!" in kindergartens, and "Always ready!" in pioneer detachments, having received a higher education, acquired a bad habit of thinking, comprehending and evaluating the surrounding reality. And comprehension of reality always gives rise to doubts.

And now they are "smearing the forehead with brilliant green" to the genius of theoretical physics, professor of Leningrad University Matvey Bronstein, "known for his classical works in the field of relativistic quantum theory, astrophysics, cosmology and the theory of gravitation" - all this at the age of 30. And his peer, Lev Landau, the future Nobel laureate, the investigators break the ribs. And in another place, another investigator hits Sergei on the head with a decanter, dreaming about space

Queen.

Is it any wonder that there was no science in the pre-war USSR. No, there were some academicians, hosts of doctors and graduate students who pretended to be vigorous activity, made commitments, reported about overfulfillment, "socialist" - competed, wrote dissertations on the topic: "The influence of running in circles on the rearing of Swabian pigs." At the same time, they fought against the "bourgeois sciences" - those that they themselves did not understand or which, in the opinion of the Great Friend of scientists, contradicted the dogmas of Marxism. For example, "bourgeois" were the theory of relativity, genetics, cybernetics, astrophysics. The focus of "obscurantism and priesthood" was cosmology, which came to the conclusion about the singularity of the Universe, that is, that the surrounding world had a beginning and will have an end. And dialectical materialism considered the Universe to be infinite and eternal. So it is written by Friedrich Engels, and Karl Marx himself told him. Those who do not agree with this - to the wall, like M.P. Bershtein, and home-grown geneticists - to the wall: "Racial nonsense is extracted from test tubes with fruit flies." In contrast to the "pernicious" West, "proletarian" sciences were invented, for example, agrobiolgy. Or here is the astronomer G.A. Tikhov, with the help of colored light filters, which he installed on a telescope, "discovered" vegetation on Mars and founded the science of astrobotany; for fifty years, carefully sketching colored spots on the disk of the planet, he observed the Martian "blue-green plants along with plants that turn brown already in the middle of summer." In science, the main thing is not to forget: "Partyism in philosophy is the main defining moment ... The philosophy of dialectical materialism is a tool for changing this

of the objective world, it teaches to actively influence this nature and change it, but only the proletariat is able to consistently and actively influence and change nature - this is what the teaching of Marx - Engels - Lenin - Stalin, unsurpassed giant minds says.

The main accusations "in the case of theoretical physicists" were the neglect of the "Juche ideas" and the desire to engage in "pure science". From the testimony of L.D. Landau: "Being a scientific worker, a theoretical physicist, I was hostile to the introduction of dialectical materialism into science, which was promoted at that time by the party, which I considered as a scholastic doctrine harmful to science. This opinion was shared by the scientific community in which I was moving at that time ... In our conversations, we ridiculed dialectical materialism in every possible way "(by the way, two anti-fascist Germans who fled Germany were involved in this case, so the Chekists handed them over to their colleagues from the Gestapo).

While Stalinist scholars were summarizing the "Short Course in the History of the All-Union Communist Party of Bolsheviks" and, like the heroes of Kondrat Krapiva's comedy, they were figuring out where the "mammoth pig" and where the "pig mammoth" are, a jet engine and a gas turbine, a particle accelerator and a nuclear reactor appeared in the world, penicillin and an electronic computer, cruise and ballistic missiles, radars, sonars, infrared devices. Already in the 1930s, Berlin television was operating, in the apartments of Europeans (and in the offices of the Soviet party nomenclature) there were household refrigerators, and color films were played in cinemas.

In the USSR, these areas were either not noticed, or killed in the bud,

turned into a corpse, which must be "removed from the great path of development of genuine, free, creative science."

In 1937 P.L. Kapitsa stated: "The development of our industry is striking in the absence of creativity ... In relation to the progress of science and technology, we are a complete colony of the West. All the usual assurances that are made publicly that science is better in our Union than anywhere else is not true." He was echoed abroad by one of the passengers of the "philosophical ship" M.A. Osorgin: "Scientific backwardness is most striking; with a few (beautiful, amazing) exceptions, Russian scientists are typical high school students. I look through academic publications, lecture reports, raptures over "achievements" and marvel at their smallness and naivety."

After another 15 years, P.L. Kapitsa wrote a letter to I.V. Stalin - all about the same:

"If we take the last two decades, it turns out that fundamentally new areas in world technology, which are based on new discoveries in physics, were all developed abroad, and we adopted them after they had received undeniable recognition. I will list the main ones: short-wave technology (including radar), television, all types of jet engines in aviation, gas turbines, atomic energy, isotope separation, accelerators ...

Of course, it is not the list itself that is terrible, but the fact that over these decades we have not had the necessary conditions to develop

new ideas in science and technology, and this is hushed up with us ...

You pointed out with exceptional accuracy the two main, ever-growing shortcomings of our organization of scientific work - this is the lack of scientific discussion and Arakcheevism ... Of course, the Arakcheev system of organizing science begins to be applied where a large scientific life has already died out, and such a system completely destroys its remnants.

The letter remained unanswered.

Soviet schoolchildren and students at that time, under the banner of "the struggle for liberation from servility and servility to the West and the establishment of Soviet patriotism," were inspired by fairy tales that "Russia is the birthplace of elephants." For example, the world's first aircraft was built by Russian officer A.F. Mozhaisky back in 1883. Nothing that he was a locomotive with wings and could not take off in principle, but our priority. Narodnaya Volya terrorist N.I. Kibalchich, who in the wild designed exclusively explosive devices to kill the tsar and his "satraps", found himself on death row, "invented" a jet device for space flights filled with powder "candles". Well, and all in the same spirit. Marconi stole the glory of the inventor of radio from the Russian scientist A.S. Popova, James Watt - Ivan Polzunov's steam engine.

If the USSR could well do without refrigerators and televisions, then it could not do without weapons. Even before coming to power, the Bolsheviks declared war on the whole world of "unbridled capitalism." In 1915-1916 V.I. Lenin theoretically substantiated and outlined his military program: first, seize power in one of the countries, then, armed in every possible way, oppose other states. For "the free unification of nations in socialism is impossible without ... a stubborn struggle between the socialist republics and the backward states." Stalin was the "best student"

and understood everything perfectly: "One of two things: either we consider our country as the base of the proletarian revolution ... or we do not consider our country the base of the revolution, we have no data for building, we cannot build a socialist society - and then, in the event of a delay the victories of socialism in other countries must put up with the fact that the capitalist elements of the national economy will gain the upper hand. Soviet power will disintegrate, the party will be reborn. That is why the loss of an international revolutionary perspective leads to the danger of nationalism and degeneration."

All for the defense of the socialist Fatherland!

In 1929, the Soviet Union began to deploy a program of military construction unprecedented in scale. Actually, for the sake of this "turning the country into a base for the further development of the world revolution", industrialization, collectivization and the complete unification of public life were started. It was envisaged to re-equip the army and navy on a massive scale with the latest models of military equipment; the creation of new technical arms; modernization of old systems; motorization and organizational restructuring of the old military branches; training of technical personnel and mastery of new equipment by personnel. The task is daunting, but, as comrade G.L. Pyatakov: "When thought clings to violence, fundamentally and psychologically free, not bound by any laws, restrictions, obstacles, the realm of the possible expands to

gigantic dimensions, and the area of the impossible shrinks to the extreme limits, drops to zero.

Using their universal method, the "Party of Miracles" quickly and extremely cruelly robbed the peasants, made them collective farmers working for workdays, and invested the proceeds in industrialization. At the same time, the contingent of free labor force imprisoned in forced labor camps was replenished.

It was more difficult with scientific and technical personnel. Old engineers and technologists were worn out, freshly baked - they did not know how to use a slide rule. There was no one to design factories. What to produce on them is not entirely clear. There was an acute shortage of specialists capable of mastering the new technology. The illiterate "heroes of the Civil War" for the complete and final victory over "world capital", on the one hand, experienced the delight of savages before modern scientific achievements and demanded all the "best" for the army: vertically taking off planes, radio-controlled armored trains, universal guns, "land armadillos", on the other hand, expressed contempt for any science.

Illiterate engineers who did not know the sopromat, and all sorts of nugget rogues, without hesitation, took on the implementation of the most crazy projects. Tens of millions of rubles were spent on "military fiction": a time machine, "death rays", an electromagnetic gun, underground tanks, stealth aircraft and fighter-interceptors sawing enemy bombers right in the air, installations for catching artillery shells and shells "with a corkscrew » for drilling pillboxes. Zero on the input gave zero on the output.

This problem was solved in three directions:

1. Having taken bread from the peasant, with the proceeds of the enterprise

they simply bought from those who were planned to be "buried" in the future - from the American bourgeoisie. Between 1929 and 1932, Albert Kahn's Detroit-based firm designed more than 520 objects for the Soviet Union. These are, first of all, tractor factories in Stalingrad, Chelyabinsk, Kharkov; aircraft factories in Kramatorsk and Tomsk, car factories in Chelyabinsk, Moscow, Stalingrad, Nizhny Novgorod, Samara; blacksmith shops in Chelyabinsk, Dnepropetrovsk, Kolomna; machine tool factories in Kaluga, Novosibirsk; Leningrad aluminum plant...

The Americans designed and helped build almost the entire Soviet military industry, because, as the Izvestia newspaper wrote, "the production of tanks and tractors has a lot in common. Even artillery, machine guns and cannons can be produced in civilian industrial plants."

At the same time, Soviet military-technical delegations traveled all over Europe to conclude agreements with leading Italian, French and German companies on the supply of equipment, technology and technology necessary for military production, as well as the latest military developments. In 1930, almost one and a half million dollars were allocated for these purchases. What could not be purchased with money could be stolen and copied without any license; So

the Fordson tractor became the Krasny Putilovets. Iosif Unshlikht asked Valerian Kuibyshev, chairman of the Supreme Council of National Economy, to allocate another seventy thousand dollars for military-industrial espionage - in order to obtain "working drawings and ready-made models of guns from abroad through undercover means." Since "the state of our design organizations today cannot provide the required terms for the design and production of new artillery weapon systems for the Red Army."

2. I had to admit the existence in the workers' and peasants' state of a certain intellectual "social stratum" - the Soviet intelligentsia. The theoretical justification in the summer of 1931 was given by I. V. Stalin, putting forward the famous "six conditions" for the development of industry:

"... our country has entered a phase of development when the working class must create for itself its own production and technical intelligentsia, capable of defending its interests in production as the interests of the ruling class.

Not a single ruling class could do without its own intelligentsia. There are no grounds for the fact that the working class of the USSR cannot do without its own industrial and technical intelligentsia.

Steps were taken to raise the level of higher education: Sopromat and higher mathematics were returned to universities, lectures were given to students and knowledge was demanded from them. Soviet specialists were attached to foreign specialists, so that they would adopt experience. Thousands of young engineers and scientists were trained and retrained in the world's leading concerns.

In addition, the Leader called "to change the attitude towards the engineering and technical personnel of the old school, to show them more attention and care, to more boldly involve them in work," because "active pests" from the environment of the "bourgeois intelligentsia" are mainly

already defeated, and "neutral" specialists, under the influence of the successes of the Soviet government, were reformed into "loyal".

Nevertheless, in the spring of 1936, telling Komsomol members about the Red Army, commander P.I. Uborevich stated: "We have engineers, technicians who don't know what sauce they eat thermodynamics with, they don't know fractions, because the devil knows what was done in high school." And he also noted that, although Western culture is called bourgeois, knowing "mathematics, geography, natural sciences is not bad."

3. The whole country was turned into a military camp and everyone was forced to work "in the Stakhanov way", for this, "free-breathing Soviet people" continued to be imprisoned and instructively shot.

Scientific thought was also stimulated by regular landings of design engineers in institutions of a closed type, sentencing them with a promise to release them if they invented something useful for the country. According to the circular dated May 15, 1930, special design bureaus began to be officially created for the rational use of "pests", and on April 1, 1931, in

As part of the Economic Directorate of the OGPU, a Special Technical Department was organized for the use of convicted specialists, which provided "conditions for scientific work" and controlled the result.

"Only working conditions in a militarized environment," Genrikh Yagoda wrote to Vyacheslav Molotov, "are able to ensure the effective activity of specialists, as opposed to the corrupting environment of civilian institutions."

It is curious that at that time 52% of the employees of the Economic Department had a lower education.

The "sharashka" system reached its heyday under Lavrenty Beria. As expected, the efficiency of such establishments turned out to be low, nothing outstanding was created in them.

(By the end of World War II, Soviet science and technology lagged even further behind the leading capitalist countries.)

In the spring of 1945, our troops captured several dozen V-2 ballistic missiles in Germany. The best specialists in jet and aviation technology were sent to study trophies and documentation at German enterprises, almost all of them went through prisons, camps and slave "sharashki", almost all of them were future academicians.

"Entering the hall," recalls B.E. Chertok, - I immediately saw a dirty bell, from which the lower part of Isaev's torso was sticking out. He stuck his head through the nozzle into the combustion chamber and, with the HELP of a flashlight, examined the details. An upset Bolkhovitinov sat next to him.

I asked:

- What is it, Viktor Fedorovich?

- This is something that cannot be! - followed the answer.

LRE of such dimensions in those days, we simply did not imagine.

Again, in a hurry, grabbing more German specialists, I had to copy Western samples and stick Soviet "labels" to them, like to a Ford tractor.

The American John Scott, who worked for five years at the construction sites of the Urals, wrote in his book: "In 1940, Winston Churchill announced to the English

people that they have nothing to expect but blood, sweat and tears. The country is at war, is at war...

However, the Soviet Union had already been in a state of war since 1931, and its people came out with sweat, blood and tears. People were wounded and killed, women and children froze to death, millions died of starvation, thousands fell under military courts and were shot in the military campaign for collectivization and industrialization. I'm willing to bet that in Russia the struggle for the production of iron and steel led to more losses than the Battle of the Marne in the First World War. During all the thirties, the Russian people waged war - an industrial war.

I can't speak for the Russian people, but Stalin won the victory in this "industrial war". What it cost is known only approximately. As a result, the largest army in the world was created, armed with the latest technology, ready to carry the "truth of the Bolsheviks" to all corners of the Old and New Worlds.

And on enemy land we will defeat the enemy

Little blood, mighty blow!

All the more, when considering issues related to the subsequent catastrophe of 1941 and the Great Patriotic War as a whole, one is struck by the discrepancy between the colossal efforts expended by the Soviet people, the hecatombs of victims brought by the regime on the altar of the world revolution, the incredible amount of weapons produced, the global nature of the tasks set and the meagerness of the results achieved. Where did it all go? And most importantly, why?

Involuntarily, the question arises about the effectiveness of the work of the Soviet system, which was never able to win by force of arms, or catch up with or overtake the capitalist countries, or even come close to them in economic competition. Moreover, just as Stalin had predicted, "Soviet power was corrupted, the party was reborn," and the system collapsed, devouring itself.

Maybe it was not worth clinging to the dogmas of Marxism-Leninism so much?

Maybe it was not worth taking the Winter one at all?

Chapter 1

As you know, before the "greatest event of the twentieth century" - the October Revolution - the Russian army did not have tanks. Due to the general "backwardness of tsarism." For some reason, many Soviet historians measured the degree of "backwardness" or "advancement" of the country by the number of tanks and bombers produced. Although in terms of the pace of development of industrial production, transport and energy networks, banking, private initiative, the level of democratic freedoms (in particular, the Russians did not know the word "propiska") and the depth of the reforms being carried out, Nikolaev Russia is still ahead of Putin-Medvedev's Russia. And somehow managed without petrodollars. And they stole less.

By 1916, only two powers, England and France, had mastered the serial construction of armored tracked combat vehicles, which for the sake of secrecy received the name "tank". By the end of the First World War, Kaiser Germany managed to make only 20 "Sturmpanzerwagens". IN

The Russian Empire had its own backlog: interesting projects were created (V Mendeleev's tank), original design developments were introduced (A. A. Kegress's mover and A. Huss's tires), individual prototypes were tested ("All-terrain vehicle" by A. A. Porokhovshchikov and "Bat » N.N. Lebedenko). At the Putilov, Izhora, Obukhov plants, they launched the production of wheeled and half-tracked armored vehicles,



in Rybinsk, it was planned to produce 12-ton "field cruisers", and in St. Petersburg - "self-engines" of Colonel N. Gulkevich. There was even a term - "Russian type of tank."

However, the national bourgeoisie, rushing to power and recklessly shaking the foundations of the regime, using the difficulties of the protracted war, was able to topple the monarchy in February 1917, but it itself was unable to resist the anarchy that swept the country. The hurricane of the Civil War deliberately unleashed by the Bolsheviks swept away everyone and everything: "landlords and capitalists", Cadets and liberals, factories and factories, finance and transport, science and education, engineering personnel and the industrial proletariat - "the whole world of violence." The country was thrown back two hundred years ago. At the same time, the Bolsheviks blew into the ears of the victorious hegemon that he, fortunately, was honored to live to see the triumph of the most advanced social system in the history of mankind, and called for armed assistance to the working people of all "backward countries" in order to make them happy with the class struggle and dictatorship the proletariat and surrounded by the care of the Soviet government.

Naturally, in such a global, paramount matter as the world revolution, it was impossible to do without tanks. The decision on their production, the chairman of the Council of People's Commissars V.I. Lenin signed already on August 10, 1919. However, under those conditions, it was possible to assemble only 15 cars, and it took almost two years.

After the Civil War, issues related to the creation of armored vehicles for the Red Army were in charge of the Main Directorate of the Military Industry of the Supreme Council of National Economy, established in 1923. A year later, under him, the Moscow Technical Tank Bureau arose, which was headed by the former engineer of the Putilov plant S.P. Shukalov. If earlier the development of combat vehicles was carried out by separate plants, which did not contribute to the accumulation of the necessary experience, now all work has been concentrated in a single center. True, in the team of designers there was not a single person who had previously been engaged in tank building. There was no technical documentation at all. By this time, Mendeleev died of typhus in Ekaterinodar, the former head of the imperial garage, Kegress, fled away from sin to his native France, Lebedenko went into exile, and Porohovshchikov finally went into aviation. Everything had to start from scratch. Military comrades demanded that urgent measures be taken to equip the armored forces of the Republic with materiel, since only a few dozen captured English and French tanks remained in the ranks - obsolete, extremely worn out, without spare parts and for the most part without weapons - and a dozen first-borns assembled in a semi-handicraft way Soviet tank building, copied from the French Renault ET-17, of the Freedom Fighter Comrade type. Lenin" and "Comrade. Trotsky", also, of course, a "fighter".

In September 1924, a special commission on tank building was created at the GUVP, based on the study of the experience of the Civil War and

designs of captured tanks, which came to the conclusion that it was necessary to have three types of tanks in service: "large", "medium" and "small". On October 25, 1925, a meeting on the problems of tank construction was held at the Mobilization and Planning Directorate of the Red Army, which systematized the design work already underway. By the decision of the meeting, due to lack of funds, the design of a "positional" (heavy) tank was curtailed, and all efforts

concentrated on the creation of "maneuverable" and "small" tanks. However, for the time being, all this remained pure projecting. In a country that had barely begun to revive itself, and only due to the fact that the Bolsheviks deliberately avoided this process by declaring the New Economic Policy and "temporary retreat", there was virtually no industry and no means for its restoration.

[®)  
sting zhikininavazhykagahl m ya doe a  
30853

cleaner Zo <

sZ[e < 518] syaz: ee G 93

| <  
= = KO < \*  
mana wa la Dina li.) 7.

44 alka. 4244. al Val daaaashesha, sy ®

The first Soviet tank M (Russian "Renault")

The system of the internal structure of the Russian "Renault"

However, the reprieve did not last long. In April 1926, Stalin proclaimed a course towards industrialization: "We need to turn our country from an agrarian country into an industrial country, and the sooner the better.

better". It was from this moment that the word began to turn into a deed. On June 2, 1926, the command of the Red Army and the leadership of the GUVP adopted a three-year tank building program. It provided for the formation of battalions of escort tanks, "escort machine guns" (112 units per battalion) and maneuverable tanks (60 units) as part of rifle divisions. The task of maneuverable tanks was to neutralize and suppress field nodes of resistance, as well as actions on enemy communications. Escort tanks and tankettes were to develop success together with infantry and cavalry. In September, in hot pursuit, a meeting of the command of the Red Army, the leadership of the GUVP and the Gun and Arsenal Trust was held to develop requirements for combat vehicles that were to be created for the Red Army. There were no tactical and technical specifications from the customer then, the inventors were guided by foreign experience and their own ideas.

The most suitable model for escorting infantry on the field

the battle was recognized as the Italian "Fiat-3000A" model 1920,

which was a lightweight version of the same classic Renault with machine guns.  
Decided to take the car

basis, but, in addition to the machine-gun spark, they demanded to install a gun in the tower and keep within 5 tons of combat weight in order to be able to transfer the tank in the back of a truck.

The project was developed by the State Design Bureau of the Gun-Arsenal Trust (former

"Tank Bureau") under the leadership of S.P. Shukalov. An order for the manufacture of a machine with the T-16 index was received by the Leningrad plant "Bolshevik" (formerly Obukhovsky). The hull of the tank was

riveted structure from armor plates assembled on the frame with a thickness of 8-16 mm. Designer A.A. Mikulin developed a compact 35 hp air-cooled 4-cylinder engine. in one block with a gearbox and a turning mechanism. The engine was installed transversely in the stern, which ensured tight

the layout of the engine compartment. In the chassis, in order to reduce the size, simplify and reduce the cost of construction, instead of four two-roller support bogies, three were installed. Vertical spiral coils were used as elastic suspension elements.

springs protected by casings.

You are FOR "YIN E NINA | >. s che, eo

YOU YOU ZAAI-ONEL TIT OT E ro or  
eee Pe

G.M

) ini rochutsini uu chuuiiiii uchun 2—3 —

Scheme of the internal device The prototype

left the shop in March 1927. After the first tests, in order to reduce the longitudinal vibrations of the hull, it was necessary to lengthen the undercarriage by one road wheel. This, in turn, led to the need to hang an extension in the bow - a metal ingot-ballast weighing 150 kg. As a result, the combat weight reached 5.9 tons, length - 3.5 m, and the speed was 16.5 km / h. The armament initially consisted of a 37-mm cannon with a length of 20 calibers and a 6.5-mm double-barreled Fedorov machine gun in a ball mount (later it was replaced by a 7.62-mm Degtyarev machine gun). The gun was planned to have "high power", but in the end they installed the same slightly

improved P.N. Syachintov 37-mm "Hotchkiss" with a shoulder rest and an effective range of 300 meters. The sighting device of the gun consisted of a front sight and a diopter. Crew - from two people. Observation of the situation was carried out through viewing slots. An "armored eye" was installed above the driver's seat - a kind of

like a monocular periscope. There were no internal and external communication devices. To increase patency when overcoming trenches and scarps, the tank in the stern had a removable tail extension. The car received the name "Small escort tank of the 1927 model MS-1 (T-18)" and on July 6, by the decision of the Revolutionary Military Council, it was put into service. By May 1, 1929, the Bolshevik plant produced the first 30 units. The tank entered the tank battalions and regiments of rifle formations, as well as formed mechanized formations. By this time, the Italians had installed a 63 hp engine on the Fiat-3000. and a 37-mm gun, while the weight of the machine was 5.6 tons, and the speed was 24 km / h. The French, having designed a new chassis, received the Renault MST, which developed a speed of 25 km / h and had a frontal armor thickness of 30 mm. In addition, command Renaults have been equipped with a radio station since 1917. And the Japanese, having bought this car from the French, modernized it and in 1929 they had a type 89 Otsu tank armed with a 57-mm cannon. In general, both the Russian Renault and the Russian Fiat were inferior to their prototypes in many respects.

In parallel with the MS-1, work was carried out on the single-seat wedge T-17 "Lilliput". After two years of fruitless design, it was decided not to be too smart and assemble a riveted hull on the chassis of an experimental T-16 tank. The caterpillar chain was rubber-metal cable type. The driver was located in the wheelhouse, who was also a machine gun shooter. The same A.A. engine was used as a power unit. Mikulin, with only two cylinders and, accordingly, halved to 18 hp. power.

39| 8 000  
©=0x>

Soviet tank MS-1 (T-18)

5  
at none

a oo No.  
E >> “ | G

We

2" [18 =. q chat s 9 = \* = \-\*

kg < - g;  
h .  
| I  
& -. |

Soviet tankette 1-17 "Lilliput" The creation of a  
"maneuverable tank" began in the fall of 1927. For

the development of its serial production, the Kharkov Locomotive Plant named after the Comintern was allocated, as part of the design bureau of which a tank department was formed. The plant already had experience in the production of the German caterpillar tractor "Ganomag", renamed, by itself, into "Kommunar". The general management of the work on the tank, which received the T-12 index, was carried out by the chief designer of the GKB OAT S.P. Shukalov; the responsible executor of the project was the leading designer of the tracked vehicles section V.I. Zaslavsky; the engine compartment was designed by A.A. Mikulin. From KhPZ, Deputy Chief Engineer M.I. was responsible for the creation of the tank. Andriyanov and deputy head of the tank shop I.V. Dudka. Thus, the transmission and chassis were developed in Kharkov, and the hull and turret were developed in Moscow. Direct supervision was carried out by the head of a special section for the assembly and testing of experimental tanks, engineer S.N. Makhonin. The future "stars" of Soviet tank building I.N. were engaged in the development of the chassis. Alekseenko, M.I. Tarshinov, A.A. Morozov, N.A. Kucherenko, V.N. Doroshenko. The layout of the T-12 was borrowed from the American T-1 machine with a tiered arrangement of weapons - a 45-mm long-barreled gun or a 57-mm howitzer and three machine guns. In the design of the undercarriage, they returned to the Fiat-3000 scheme - four support bogies (four interlocked small-diameter rollers each), four support rollers, a steering wheel with a caterpillar tension mechanism and a drive wheel in the stern. The booking principle was even simpler - vertical sheets had a thickness of 22 mm, horizontal - 12 mm. It was supposed to use a domestic 180 hp tank engine as a power plant. designs by A.A. Mikulin. Assembly began in October 1928. However, by this time, the suspicion began to creep into the souls of the red commanders that the characteristics of the ordered equipment did not fully correspond to the realities of the war they had planned with the "hostile capitalist environment". This was confirmed by the information of the head of the Motorization and Mechanization Department of the Red Army I.A. Khalepsky, who made a cruise around Europe and America to get acquainted with the samples being developed by a potential enemy, as well as a thorough study of the German "tractors".

RA

Soviet maneuverable tank 1-12

In accordance with a secret Soviet-German agreement, a joint tank school "Kama" was created in Kazan. Here in the spring of 1929, under the guise of agricultural vehicles, prototypes of tanks built by the Germans in circumvention of the Treaty of Versailles were brought for testing. Six "grosstractors", created on the instructions of the Reichswehr by three different companies, had a different device, different engines, different types of suspension and weapons. In these vehicles, the latest European achievements in the field of engineering and technology were introduced and tested, which aroused understandable interest among Soviet tank builders, who adopted and borrowed a lot from German friends: hull welding methods, twin installation of a cannon and machine gun, chassis design, ammunition rack, tank sights and radio stations. In the landmark April 1929, the HUT conference of the "Party of Miracles" approved the first five-year plan. July 15 came out

resolution of the Politburo of the Central Committee of the All-Union Communist Party of Bolsheviks "On the state of defense of the USSR", which set the task of having 3,000 tanks in service and up to 2,000 in reserve by the end of the first five-year plan. Following, on July 17-18, a meeting of the Revolutionary Military Council of the USSR was held, at which V.K., developed by the Deputy Chief of Staff of the Red Army, was approved. Triandafillov "The system of tank-tractor-auto-armor of the Red Army", which provided for the creation and adoption of the following types of tanks:

1. Wheeled and caterpillar tankette weighing no more than 3.3 tons. The travel speed was set at least 60 km / h on tracks and 40 km / h on wheels. The armor was supposed to protect against shelling with armor-piercing bullets at a distance of 300 meters. Armament - one machine gun in a rotating turret or two machine guns providing circular fire. The range on the tracks is 300 km, the height of the tankette is no more than 1.5 meters, the crew is 2 people.

2. Small escort tank. Weight no more than 7.5 tons, speed 25-30 km/h. The thickness of the armor should provide protection against a 37 mm projectile fired from a distance of 1000 meters with an initial velocity of 700 m/s. Armament - one 37-mm cannon and two machine guns. Range - 200 km, crew - 3 people.

3. A medium (maneuverable) tank for breaking through a fortified defense line weighing no more than 16 tons, developing a speed of 25-30 km / h and withstanding a 37-mm projectile at a distance of 750 m. Armament - one 45-mm cannon and three machine guns. Range - 200 km, crew - 3-4 people.

#### Conclusions:

Firstly, it became clear that the performance characteristics of the MS-1, which entered mass production for only a year, do not meet the requirements for an escort tank, and it is suitable for use only in "low-culture secondary theaters of war", such as how to "amaze" the Chinese. However, due to the lack of other promising models, it was decided to continue the production of an obsolete car, taking "every measure to increase the speed to 24-25 km / h."

Secondly, those samples of armored vehicles that were just being created by Soviet designers were also outdated.

Based on the results of the meeting, the military industry was given the following tasks: taking into account the increased requirements, to modernize

MS-1 / T-18, to redesign the T-12 maneuverable tank, strengthening its armament and increasing the cruising range, and to develop a new T-19 escort tank as soon as possible.

But, as one of the presenters of the current tongue-tied television put it, it turned out that "everything in life is not the way it really is."

So, it was not possible to build a new engine for the T-12 tank. Instead, they installed the "domestic" aircraft engine M-6 (licensed "Hispano-Suiza") with a reduced to 180 hp. power. The prototype, which was significantly different from the project, without armor and weapons, was ready for factory tests in April 1930. 45 mm Sokolov cannon

filed only in July. By the same time, a revised version of the maneuverable tank, called the T-24, was hastily built. It had new fuel tanks, due to which the cruising range increased to 120 km, thinner armor, a fourth machine gun in the frontal ledge of the turret box and a fifth crew member. The tank weighed 18.5 tons, its height exceeded 3 meters, the speed decreased from 26 to 22 km/h.

In July 1930, both machines were tested in Kubinka in the presence of K.E. Voroshilov, I.A. Khalepsky and the head of the Technical Department of the UMM G.G. Bokis. The new tanks did not impress much, but the T-24 was accepted for mass production. At the Kharkov Locomotive and Chelyabinsk Tractor Plants, it was planned to produce 300 units within a year and a half, but only 25 were made. Since the Sokolov cannon provided for by the state turned out to be unsuccessful, the machines were equipped only with machine guns. In 1932, all of them were already listed "at the disposal of educational institutions."

ROC

5) Her 52  
a red b?

Threat

Soviet tank 1-24 The

production of the T-17 tankette, which was transported for a total of three years, was considered inappropriate after tests also carried out in the summer of 1930. The result is depressing:

single "Lilliput" on a decent road developed a maximum speed of 16 km / h. Instead, they decided to create a two-seat vehicle using standard T-18 tank components. This is how the "large escort tankette" T-23 appeared, which had a 40 hp engine, a mass of 3.5 tons and a cost (and without a turret and weapons that were never installed) comparable to the cost of a full-fledged tank. What

completely ruled out the possibility of its mass production. Initiated by I.A. ended in complete failure. Khalepsky, a project to create a tank of the original design of the self-taught inventor N.I. Dyrenkov, who worked at the Izhora plant and continuously worked in the field of armaments. This enthusiast, who had an indefatigable passion for projecting, promised in the shortest possible time, literally in six months (!), To build a combat vehicle (in six copies), which will have a wheeled, caterpillar, railway and "underwater patency", carry armor up to 20 mm thick, three 45-mm cannons in three towers, five machine guns, reach speeds of up to 35 km / h and at the same time weigh only 12 tons.

The head of "all mechanization", who had graduated from the district school before the revolution and worked "in a past life" as a simple telegraph operator, was delighted. "A personal conversation with the inventor makes it clear," Khalepsky wrote to Unshlikht, deputy chairman of the Revolutionary Military Council, "that he considers this type of tank as a universal combat weapon instead of tracked tanks, armored vehicles and even armored trains (in the case of several tanks being coupled into a train). I think that considerations

the author of the project are reasonable and should be verified by practice". Checked. Allocated funds. In December 1929, they organized the Experimental Design and Testing Bureau of the UMM Red Army, headed by Dyrenkov. Over the next year and a half, at the Izhora plant, having spent almost a million rubles, they assembled a twin-engine "universal combat vehicle" called the D-4, with two diagonally located towers, a caterpillar mover, wagon rollers under the bottom and four automobile wheels on the sides. The tank immediately showed two shortcomings: its weight exceeded 20 tons and it had not yet been driven. Moreover, he could not demonstrate underwater patency. The indefatigable Dyrenkov immediately switched to designing a more advanced D-5 model, without wheels, but with three-inch guns and 35-mm armor. At the same time, Nikolai Ivanovich worked on the D-7 wheeled-tracked tankette, D-8, D-12 and D-13 armored vehicles, armored tractors, or, as the author himself called them in official correspondence, "surrogate tanks" D-10 and D-11, the D-14 landing tank, the D-15 "chemical attack" tank, which was supposed to carry 4 tons of chemical warfare agents and devices for spraying them, the D-38 tank, the D-2 motorized armored car and the Dyrenkov brand impenetrable armor recipe. Not knowing the methodology of calculations and the mathematical apparatus, refusing the services of the engineers offered to him, the inventor solved all theoretical problems empirically, "tested by practice." For example, to determine the degree of pressure on a hollow structure immersed in a liquid, he made steel boxes, lowered them into the water and watched "what would happen." In the autumn of 1931, the UMM commission, having examined the immovable "universal tank" and admired the drawings of promising tracked-railway-submarine vehicles conceived by Dyrenkov, fell into deep doubts about the possibility of implementing a bold project. As reported to the authorities by G.G. Bokis: "I have big doubts that something will come out of this machine, and whether millions of rubles will be spent again, and as a result we will again get a box with various inactive mechanisms." However, during that period

Dyrenkov was supported by M.N. Tukhachevsky, and another year and an unknown amount of money were spent on the manufacture of a life-size model of the D-5 and its individual components.

Of all Dyrenkov's fantasies, the customer accepted for mass production only the reconnaissance armored car D-8 / D-12, created on the basis of a Ford car. The car was an armored "beetle", into which the driver and crew commander could hardly squeeze into an embrace with a DT machine gun. In the frontal, stern and side plates of the armored hull, holes were cut for four ball mounts - theoretically, this provided the possibility of circular firing. In fact, according to the conclusion of the STC UMM commission:

"The installations for diesel fuel available on the vehicles are located without taking into account the possibility of firing from them. The installation of a machine gun by the driver due to the impossibility of bringing the machine gun to a horizontal position, since the shooter's head rests on the roof, and the lack of a descent angle allows machine gun fire only at high targets.

Shooting from side installations is also impossible due to the difficulty of adapting the shooter to these installations. If you shoot from the left installation, then the back wall of the car and the driver's back interfere. At



shooting from the right installation, you can shoot straight ahead. In this case, the arrow has to squeeze between the driver and the rear wall of the case. The firing sectors from the right and left installations are completely absent. The same position is when firing from the rear installation, which has the same disadvantages as the onboard ...

Moving a machine gun from one nest to another in combat on the move is completely impossible, since the machine gun overheats after firing and it is absolutely impossible to take it with bare hands.

If you have not one, but 2-3 machine guns installed in existing installations, then they make it completely impossible to fire from the car due to the tightness of the shooter. The observation conditions for the vehicle commander (who is also a gunner) do not meet tactical requirements at all.

The legend says that the D-8 was built in one day, the design was copied from an American magazine. Until the end of 1931, the Red Army received 60 such devices. Moreover, for the protection of railway facilities, the OGPU adopted three dozen armored cars, outwardly similar to illustrations for Jules Verne's novels. Which the military abandoned due to the fact that they were unreliable, did not fit into turns and were too difficult to operate.

In December 1932, the D project was closed down, and the Experimental Design Bureau was disbanded.

Hopes for a new escort tank did not come true either. As planned, the T-19 was to become a strike weapon of the mobile units of the Red Army in a maneuverable battle. It had to overcome trenches and wire obstacles at high speed, withstand a 37-mm projectile from a distance of 100 meters, have a mass of no more than 7.3 tons, a 100-hp six-cylinder engine, armament from a 40-mm cannon and two machine guns, armor protection with a thickness of 18-20 mm. In addition, it was planned to install equipment for operations in conditions of chemical contamination.

and giving the tank "floating properties". One of the Red commanders demanded that the machine be equipped at the same time with "articulated paws with spikes for climbing over walls and moving in mountainous conditions." Another theorist of mechanized warfare at the same time suggested "to give the tank the opportunity to dig in; and this - since there is an engine - is not such a tricky thing. The design was complicated not only by the illiterate requirements of the customer, but also by the wave of denunciations that arose after the "Industrial Party" process for any reason, accusing the designers of sabotage. S.A. was appointed the responsible executor for the tank. Ginzburg. Engineers A.A. worked on the project. Mikulin, V. Simsky, D. Maiidel, "gunner" P.N. Syachintov.

The undercarriage of the tank was borrowed with minor changes from the Renault MS1 - three bogies with four interlocked rollers and two independent road wheels, vertical springs in the suspension and a transmission with a differential as a turning mechanism. At the suggestion of Ginzburg, an original armor scheme was developed with large angles of inclination of the armor plates, which made it possible to reduce their thickness and the total weight of the vehicle. The T-19 prototype was basically ready by the end of August 1931.

However, the characteristics of the tank turned out to be lower than planned, the weight, on the contrary, was higher, the production was too complicated, and the cost of the prototype was 96 thousand rubles (according to the program, the cost of a maneuverable tank should not have exceeded 50 thousand). Despite the fact that a number of components were never made: the gun could not be completed on time, the engine was not finished, and the designed conical turret was not even started.

Therefore, by a special decision in 1931, mass production of the modernized T-18 was continued. True, they managed to do a little: up to 40 hp. increased engine power, put a four-speed gearbox instead of a three-speed one, a stern niche appeared in the tower, designed to install a radio station. The maximum travel speed was increased to 17.5 km / h, that is, by one kilometer. The result was MS-1/T-18 model 1930.

Thus, as a result of the implementation of the three-year tank building program, the Red Army received 948 units of the obsolete T-18 light tank and two hundred BA-27 armored vehicles. (Armored cars armed with a 37-mm cannon and one machine gun were assembled on the basis of a licensed Fiat lorry AMO-F-15 with a 32 hp engine. They ran well on a flat road and hard ground, reaching speeds of up to 45 km / h, but stalled uphill and had a tendency to roll over on sharp turns.)

On the plus side is the accumulated experience, the possibility of training troops on real equipment and practicing tactical techniques. Guderian had to test his theories on plywood-lined cars.

But experience is experience, and the aggressiveness of imperialism has steadily increased. And there was nothing to fight.

At the end of 1929, the board of the GUVP came to the conclusion that the development time of all domestic tanks was disrupted, their characteristics did not meet the specified ones, tank designers did not have the necessary experience, the industry was experiencing an acute shortage of qualified personnel, machine tools and tools, and the quality of serial combat vehicles was lower. any criticism. On December 5, the commission under

chaired by People's Commissar of Heavy Industry Sergo Ordzhonikidze, she decided to invite foreign designers to the USSR and send Soviet representatives abroad to purchase samples of armored vehicles and the necessary documentation. Already on December 30, a procurement "authoritative commission" specially created by the decision of the Revolutionary Military Council, consisting of I.A. Khalepsky, D.F. Budnyak, N.M. Toskina, S.A. Ginzburg. The delegation sent their feet to the UK, which occupied the place of the world leader in the development of armored vehicles. According to the program approved in Moscow, samples of tankettes, small, medium and large tanks were to be bought here. The Vickers firm, which worked a lot for export, was pleased to provide an opportunity to get acquainted with its designs.

The greatest interest of Soviet specialists was caused by 6-ton and 12-ton tanks, which in most respects met the requirements of the Red Army weapons system. The British were ready to sell them with all assembly and installation drawings (since they were not adopted by the British army) and inform

about all design improvements. But the company categorically refused to negotiate the sale of the large Independence tank, offering to create a new car commissioned by the USSR. As a result, the commission acquired 30 tanks and 20 wedges. M.N. especially insisted on acquiring the latter. Tukhachevsky, who dreamed of "aviation combat" on the ground and in the air. Soviet representatives also visited Czechoslovakia, France, Italy, ordered samples of cars and motorcycles, but did not find anything interesting from armored vehicles.

Then the "merchants" went to the North American States. There it was planned to get acquainted with tanks of the T1.E1 type from the Cunningham company, however, these vehicles were considered worse than the Vickers already purchased, and the price and

the terms of the deal were completely unacceptable. But the wheel-tracked vehicles of the talented designer J. Christie, which developed speeds of over 120 km / h on wheels, could not help but attract attention. The problem of the operational mobility of tanks, that is, the

possibility of their transfer in the theater of operations over long distances, was very acute in those years. Moving on caterpillars, tank columns destroyed the roadway, and the caterpillars themselves, which had a small margin of safety, "flew" through 80-100 km of march. Therefore, combat vehicles were delivered to the combat area by rail or in trucks. In the 1920s, engineers from different countries developed a number of tank designs with a dual propulsion system - caterpillars and automobile-type wheels. When driving along the highway, the wheels were lowered (or the caterpillar mover was raised), and the tank could move at a speed of 50-60 km / h. However, machines with such a chassis were bulky, unreliable, difficult to manufacture and operate, and things did not progress beyond experiments. Christy went the other way. In their revolutionary machines

M.1928 and M.1931, he used an individual suspension of four

large diameter track rollers without track rollers. Caterpillar

worn on the front and rear wheels. Its upper branch simply lay on the rollers, which were both supporting and supporting. On rough terrain, Christie's tanks moved like everyone else

"normal" tracked vehicles, for road traffic, the tracks were removed and stacked on the hull. Torque from the drive wheel located in the stern was transmitted to the rear pair of road wheels. The front pair of rollers was controlled, like a car, its rotation was carried out using the usual "steering wheel". Elastic suspension elements - vertical springs - were hidden inside the body. A powerful aircraft engine provided a specific power of more than 30 hp. per ton. A crew of three could change the tank's shoes within half an hour. The presence of such a machine was not provided for by the weapons system of the Red Army. However, the Soviet leadership was interested in the excellent maneuverability of the Christie tanks. In addition, there was a rumor that the Poles were planning to buy them, and Moscow considered "punish" Poland to be enemy No. also the rights to manufacture them for ten years. Military engineer M.N. Toskin was instructed to master management and

maintenance of machines and ensure their delivery to the USSR. The whole history perfectly characterizes the degree of "decay" of Western democracies. Not only does a private individual assemble tanks in his own garage, but he also sells them to a state with which the United States does not have diplomatic relations. Try, citizens of "free Russia", to carve at least a lady's pistol for sale in your barn! By a decree of the Presidium of the Council of the National Economy dated May 19, 1930, a permanent engineering design bureau for

tanks was created under the Mobilization and Planning Directorate under the leadership of A. Adams, assistant head of the Ordobedinenie. The basis of the bureau was a group of designers from the GKB OAT and the Bolshevik plant, who had experience in the development and serial production of the T-18 tank. At the end of the month, foreign novelties began to arrive in the country. They have been subjected to rigorous research, testing and testing. Then the engineers were given the task of setting up serial production of the purchased samples within six months. The first wedges were delivered to the USSR "Carden-Loyd" Mk. PGU. I must say that under the influence of the views of theorists, like J. Fuller and B. Lidell-Gart, not a single self-respecting military man escaped the craze for midget "armored skirmishers" with machine-gun weapons and a crew of one or two people in the 1920s. Enthusiasts of mechanized warfare predicted that in the future, maneuverable, easy to build and operate, and, importantly, cheap mini-tanks would completely replace cavalry on the battlefield. In the Soviet Union, M.N. Tukhachevsky. The tankette, created in 1928 by J. Carden and V. Loyd, was considered the best model in its class. It was purchased by 16 countries of the world, and Italy, Poland, France, Czechoslovakia and Japan acquired a license for production. She was a reliable machine of an extremely simple design, weighing only 1.4 tons and reaching speeds of up to 45 km / h. 22.5 hp engine was located in the middle of the hull between the driver's and gunner's seats, which made it possible to reduce the length of the vehicle and increase maneuverability. She had a planetary box

gears and automobile differential as a turning mechanism. There were no supporting rollers, the upper branch of the caterpillar slid along the chute. The machine gun was placed in a removable mount on the starboard side and could be easily removed. Due to the lack of a tower and a roof, the crew was covered from enemy small arms fire by vertical armor plates 6-9 mm thick; the height of the tankette was extremely small.

In August 1930, a decision was made to organize the production of such machines in the USSR on the basis of the 2nd Automobile Plant of the All-Union Automobile and Tractor Association, where prototypes were transferred, as well as all domestic materials for the independent design of wedges. Design Bureau under the leadership of N.N. Kozyrev was instructed to "improve" the car and prepare it for serial production. The modernization consisted of installing a roof with folding caps in the upper part of the hull, using a more powerful engine, increasing the capacity of fuel tanks, the amount of ammunition and installing thicker frontal armor. As a result, the dimensions of the vehicle slightly increased, the speed slightly decreased, and the combat weight was 3.5 tons. The suspension consisted of six bogies with twin road wheels (instead of four in the prototype); leaf springs served as an elastic element. The transmission was borrowed from

truck "Ford-AA", the motor-power unit was made on the basis of the GAZ-AA engine (also "Ford") with a power of 40 hp, the armament was represented by a 7.62 mm DT machine gun.

A prototype tankette T-27 was ready in January 1931, and already on February 13, even before the end of state tests, it was adopted by the Red Army. And very quickly turned into a training machine. The actual combat capabilities of the tankettes turned out to be low, the armor protection was insufficient, and the absence of a rotating turret did not allow the effective use of the already poor weapons. The tight layout, small internal dimensions created difficult working conditions for the crew; the location of the engine in the central part of the hull led to an increased gas contamination of the fighting compartment, where at the same time the heat of the running engine was dumped.

But in a country brought to cannibalism, the T-27 wedges were regularly riveted for almost four years with a truly Soviet scale. For comparison: the British army ordered 325 Carden-Loyds for itself, the militant Poles produced a little more than 300 under license, the Italians, having upgraded the original model, made over 2500 "Fiat-Ansaldo small tanks" in seven years, but they also exported to dozens of countries.

In the peaceful USSR, "only" 3295 T-27 units were built, and 16,000 were assembled!

jacket about YiT-Km: >  
UTB

#### Soviet tankette 1-27

On the same day as the tankette, on February 13, 1931, the T-26 escort tank was adopted, which simply did not exist yet. But the demonstrative display of the 6-ton Vickers on our commanders, which took place in early January, made a painfully strong impression. They literally said in chorus: "We want exactly this and as soon as possible!" The design of the tank was simple: a riveted hull and two machine-gun turrets made of rolled armor plates half an inch thick; in the undercarriage - two bogies with four rubber-coated rollers of small diameter on leaf springs and four support rollers; the drive wheels were in front, and the guides with tension mechanisms were in the back; air-cooled engine "Armstrong-Siddley" with a capacity of 80 "horses" with horizontally arranged cylinders, which made it possible to reduce the height of the engine compartment; compact and reliable multi-disc

clutches. The car had good cross-country ability and maneuverability, was distinguished by a smooth ride and a top speed of 35 km/h. Domestic engineers were more restrained in their assessments, although they recognized that the 6-ton Vickers, despite the shortcomings inherent in all experimental models, is "without a doubt the best of all currently known samples of foreign tanks." As the most appropriate solution, they, in particular the group of S.A.

Ginzburg, proposed to create a combined version of the combat

machines, using the hull, engine and weapons under construction on

plant "Bolshevik" promising escort tank T-19, and

propulsion and transmission - from Vickers, promising to make everything better, easier and cheaper.

But, as always, "history gave us too little time." The Soviet Union was about to be attacked! Valiant intelligence, having penetrated the secrets of the world behind the scenes, found that the government of Poland is also purchasing samples of armored vehicles in England and America and is "strongly preparing for their mass production." According to Voroshilov and Tukhachevsky, by the end of 1931, the Poles could have made more than 300 light tanks based on the Vickers and up to 100 Christie tanks, and a year later - twice as much. And then, Khalepsky explained to the engineers who did not understand anything about politics, the "pilsuds" would receive trump cards "in terms of the use of armored forces, which they would not fail to use, since tanks like Christie are the best suited for waging war in the expanses of the USSR", that is, they will jump lords into their brand new tanks and, "sparkling with the brilliance of steel", will rush into a furious campaign against Moscow or Kiev.

This means that it should immediately, without waiting for the completion of experimental work, to begin production of a b-ton "Englishman", by the end of 1931, make 500 pieces. As my favorite admiral used to say: "And so that in half an hour the piglet would run!" The Soviet leaders ordered that the Vickers and the Christie tank be exactly copied "as they are" in order to "repel possible aggression if necessary." They thought it would be better that way.

The production of the escort tank was first planned to be deployed at the Chelyabinsk Tractor Plant under construction, then at the Stalingrad Tractor Plant, also under construction. Moreover, at the latter it was supposed to create a special workshop capable of producing up to 10,000 tanks a year in wartime. And by the way, one copy of the Vickers was sent to Stalingrad. There, the imported car was dismantled into parts, thoughtfully studied, but could not be put back together. Good thing we bought 15 of them.

As a result, the order was given to the Leningrad plant "Bolshevik" (a year later, the workshops that produced tanks were allocated to an independent plant No. 174 named after Kliment Efremovich). S.A. was instructed to manage the design work for the preparation of mass production. — Ginzburg. The technology, for the acquisition of which people's money was spared, was developed by engineer M.P. Siegel. The original had to be reproduced exactly according to the English drawings, it was strictly forbidden to make any changes or improvements to the basic design so as not to spoil the "unique thing". Well, Comrade Voroshilov had no idea what, for example, is the difference between the inch and metric systems of measurement and how the Izhora plant manufactures

armor with a thickness of 12.7 and 9.8 mm.

The technical process was approved in mid-June, and storming, handicraft, fraud and a colossal marriage began, in particular for engines, which amounted to 65%. The first twenty-five tanks, made according to temporary technology with extensive use of imported parts, simply could not budge. Hulls made from raw armor at an accelerated pace

10 mm thick, an armor-piercing rifle bullet of the AU-30 type pierced from a distance of 200 meters! The English corps "made of good quality cemented armor" did not take the same bullet from 50 meters.

The layout of the Soviet tank 1-26

By the end of the year, 120 T-26s of the 1931 model, almost exact copies of the overseas model, were pushed out of the factory shops. The riveted hull of the tank had a box-shaped section, the thickness of the armor plates was 10 mm and b mm (13 mm plates were not installed due to a large number of defects, and in general, for the first six months, the tanks were assembled on bolts and screws with

the possibility of replacing the Izhora "non-standard" with something more "armored"). On a turret box with a vertical frontal sheet on ball bearings, two cylindrical turrets were placed. They provided space for one crew member and installed a DT machine gun (a little later, the still indispensable 37-mm Hotchkiss gun was mounted in the right turret). The sector of fire of each tower was 240 degrees. It was believed that such an arrangement of firing points ensures the most effective destruction of enemy infantry when overcoming the trenches. It was not possible to establish the manufacture of optical sights. The driver was in front of the hull on the right. The combat weight of the tank was 8.2 tons, the speed along the highway was 30 km/h, and the cruising range was 140 km. The means of external communication remained the simplest - signal flags and rockets. Outwardly, everything looked very similar. But the military was in no hurry to accept the car they loved so much from the industry, demanding that it not only look like the Vickers visually, but also be able to at least move normally.

The decision to produce in the USSR the Christie "system" tank under the designation "BT" - a high-speed tank - was adopted by the Revolutionary Military Council on November 21, 1930.

On February 13, 1931, the tank, which, apart from the Khalepsky commission, had never been seen by anyone, was adopted by the Red Army. Exemplary copies arrived from America only in March.

re i

T-26 escort tank, model 1931 To this end, on May 25, a special design bureau was formed under the general supervision of S.A. Ginzburg. The head of the tank section of the Technical Committee of the UMM, military engineer 2nd rank N.M. was appointed his deputy. Toskin, who soon replaced I.N. Alekseenko as head of the KhPZ design bureau. A.O. Firsov, A.A. Morozov, A.A. Moloshtanov, M.I. Tarshinov,

S.N. Manokhin, P.N. Goryun. In total, the SKB employed 22 designers, most of whom did not have a higher education. The prototypes were to be ready by September 15, by the end of the year 30 vehicles should have been built, of which six should be sent to Moscow for the November 7 holiday to participate in the military parade. The state order for the T-24 tank was cancelled. Almost immediately it became clear that, despite

for a number of undoubted advantages, the overseas sample (besides without a tower) requires significant refinement and simply copying it in the form "as it is" does not make sense. In addition, to fulfill the task set by the government, there was not enough equipment, materials, raw materials, and personnel. In addition, there were no engines. J. Christie used a 12-cylinder Liberty aircraft engine with an HP 338 power. Under the domestic brand M-5, it was manufactured at the Bolshevik plant, but it was at this time that its production was discontinued in order to create engines for the T-26. Therefore, they decided to purchase in the USA all the remaining Liberty aircraft engines from the First World War. At the same time, a diesel department was organized at the plant, setting it the task of creating a compact diesel engine with a capacity of 300 hp. "as a new type of engine for a tank"; the work was headed by a young and energetic designer K.F. Chelpan, who completed an internship in the laboratories of Germany, Switzerland and England, and his classmate at the Kharkov Institute of Technology Ya.E. Wichman.

At the same time, the production plan lowered from above did not change one iota: by the spring of 1932, KhPZ was supposed to produce 2,000 tanks a year. The most surprising thing is that for the festive parade it was possible to assemble the first three cars that, under the leadership of the plant director A.S. Bondarenko run from Kharkov to Moscow.

On the other hand, there is nothing surprising - the war is on the nose. Although the West was shaken by the global economic crisis, and the capitalist countries signed the Washington and London agreements, limiting armaments and sawing battleships into pins and needles, Comrade Stalin presciently warned: the deeper the crisis experienced by world capitalism, the more he wants to resolve "all contradictions, together taken at the expense of the USSR. And Comrade Voroshilov ordered: to beat the enemy with little blood on his own territory. Propaganda tirelessly reminded the "proletarian and peasant masses" that "the whole world is arming itself to the teeth and against us."

At this time, Stalin's relations with the commander of the Leningrad Military District M.N. Tukhachevsky. In January 1930, Mikhail Nikolayevich handed over a note to the people's commissar of defense, in which he proposed to radically revise the plans for the construction of the armed forces in favor of their multiple increase. Namely: in the next three to four years, prepare for deployment a "wartime" army consisting of 260 rifle and cavalry divisions, 50 divisions of the artillery reserve of the RGK and 255 machine-gun battalions of the RKG, which should be armed with 40,000 aircraft and 50,000 tanks. At the Headquarters of the Red Army, the "original" project of the failed conqueror of Warsaw was ridiculed. K.E. Voroshilov did not rave about the ideas of world domination, and he still felt sorry for Russia: "... for the country also lives, it is unfolding, is in the process of reorganization, human needs are not satisfied properly, and if we

seized those resources, we would put the country under a very difficult situation, under a very heavy blow." But the people's commissar left the final verdict to Stalin.

The leader, who, in principle, was indifferent to the "human needs" of the people, then supported Kliment Efremovich, calling Tukhachevsky's plan fantastic and clerical: "To implement such a plan means for sure to ruin both the economy of the country and the army. This



it would be worse than any counter-revolution." It's not that Iosif Vissarionovich was a "red peacemaker" in contrast to the "red militarist" Tukhachevsky. On the contrary, Stalin was very impressed by his ideas, they were in tune with the main goal. But, firstly, Voroshilov was "his own", and Tukhachevsky was a nominee of the "Trotskyist" L.D. expelled from the country. Trotsky, "pushed" to the post of commander of the district from the post of chief of staff of the Red Army. Secondly, the general secretary knew better than anyone the state of the Soviet economy and therefore was cautious. There is one more subtlety: the idea becomes correct only if it is spoken by the Leader.

AND

} ITT

; ;.. 2 RCDs  
7% ca =.

Noah Christie Tank Suspension

Soviet high-speed fighter BT-2 Less than a year later, intoxicated by the dizzying successes in robbing the peasantry and forced "socialist reconstruction", Stalin changed his point of view. In February 1931, he demanded that the five-year plan be completed in three years, and in July M.N. Tukhachevsky was appointed deputy chairman of the Revolutionary Military Council and head of armaments of the Red Army. On August 1, the Council of Labor and Defense indicated that technical advances in the field of tank building "created strong prerequisites for a radical change in the general operational-tactical doctrine," and the next day a decree on a tank building program in wartime conditions appeared. According to it, the domestic industry in the threatened period (and it has already begun) should have reached the level of production of 40,000 (forty thousand) tanks per year. Actually, for the sake of this, miracles of industrialization were created, and the country turned into a giant concentration camp, "where a person breathes so freely", was built up with barracks, and towers and barbed wire only separated one "zone" from another.

"The boundaries between the camp and the will are blurring more and more," wrote a contemporary. - In the camp there is a process of relative emancipation of campers; in the wild there is a process of absolute enslavement of the masses. The camp is not at all the wrong side of the will, but simply a separate and not even very peculiar piece of Soviet life. If we imagine a camp somewhat less hungry, better dressed and less intensively shot than now, then this will be a piece of the future Russia, subject to its further "peaceful evolution" ... And today's Russia is little better than today's concentration camp.

In September, the Revolutionary Military Council approved without any doubt the Stakhanov plan for 1932 - to build 10,000 tanks. Then - a continuous "doubling of GDP."

This is really a war. Imagine that in 1934 the factories issued

40 thousand tanks. With those produced in previous years, it turns out about 70 thousand. Two questions immediately arise. What to do with factories that have launched the production of military vehicles on a scale unprecedented in the world? Release another 40,000? Or Stalin was going to hand out pennants to the leaders of production and stop

conveyor lines in anticipation of "wartime"? Or on the same lines to produce tractors with a Christie chassis, a Liberty engine and armor from the Izhora plant?

The second question is: what to do with and how to maintain such an abyss of equipment in peacetime? After all, 70,000 tanks can be built. But what to do with them then? If the war, God forbid, did not start, where to "put" and how long to store? How much fuel and spare parts and specialists so rare in the USSR are needed for their operation? Only in order to complete the crews, even taking into account the fact that a third of the plan was to be double tankettes, 180 thousand trained tankers were required, and the total number of armored forces should exceed 2.5 million people.

In a word, it is possible to build 40,000 tanks a year only if they are continuously "expended". But in addition to tanks, combat operations require an appropriate number of aircraft, guns, cars, and much more. What economy can handle it?

Definitely, in 1933-1934, someone simply had to "poke his pig's snout into our Soviet garden" and force the Red Army to "retaliate" on foreign territory. In addition to them, Tukhachevsky, who was enthusiastically developing a plan for a new campaign against Warsaw and the invasion of Bessarabia, suspected of dishonest intentions "the ministers of America, England and France and other capitalist countries", who "continuously drive around" and feverishly "put together an anti-Soviet front", in other words - they are preparing "new imperialist intervention". In any case, Germany, not friendly to the Soviets, with its 100,000-strong Reichswehr, which did not have a single tank, not a single combat aircraft.

In connection with the new historical decisions of the beloved party and the native government, the designers of the Bolshevik plant were allowed to deviate from the English "canon" and make any changes to the technology and design of the T-26 tank, if only to increase production without reducing combat qualities. But in Soviet production, the plan for the shaft always stood in the first place, and the plan required the production of 3,000 escort tanks in 1932. As a result, quite naturally, the defectiveness for motors has already reached 88%, and for the hulls supplied by the Izhora plant - 41%. Kharkiv residents continued to toil with the "fast fighter". Military engineer M.N. Toskin was recalled to Moscow, in December 1931 A.O. became the head of the KhPZ tank design bureau. Firsov. Anatoly Osipovich was a real, that is, professional, engineer of the old school: he studied in Germany, did an internship in Switzerland, but worked at home in the shipbuilding industry. In general, an intellectual from the "former", and therefore quite naturally was enlisted by the "organs" of Comrade Yagoda as conspirators and pests, was arrested in 1930 in the case of the "Industrial Party" and received a specific term. After that, as a great connoisseur of diesels, he was sent to design tanks. It was Firsov who eventually turned the American experimental model into a full-fledged combat vehicle, which became a symbol of Soviet

armored forces of the 30s. Until then...

The far from new Liberty engines received from the North American States were distinguished by exorbitant oil consumption, they started reluctantly, and if they started to work, they quickly overheated and

often ignited spontaneously. Tank tester E.A. Kulchitsky claims that, according to the factory instructions, "it was allowed to start the engine in the presence of a fireman with a fire extinguisher." Domestic air cleaners traditionally worked disgustingly. The towers produced by the Mariupol plant made of armored steel "D" gaped through cracks (out of 12 tons of cast metal, it was possible to obtain at best one ton of standard armor). Like cookies, caterpillar tracks supplied by the Kramatorsk plant from substandard steel broke, the brackets of the "sloths" fell off, and the gears of the gearbox could not withstand the load. Yes, and the Kharkov workers themselves drove marriage no worse than subcontractors. Perhaps they were poorly trained, or perhaps they were simply malnourished. Since, simultaneously with the grandiose successes of collectivization, food disappeared in the country, it was exchanged, including for Liberty motors. Village grain growers were ordered to endure, and if unbearable - to die for the glory of the party of Lenin Stalin; in the cities, a rationing system was introduced, and the norms were steadily declining.

An industrial worker in 1932 could buy 2 kg of meat per month on a card; the recruited foreigner was prescribed 3 kg, besides, he was overstocked at low prices in a special store. One of the builders

Stalingrad Tractor Plant, a person of "German nationality", wrote to his homeland: "The hardships that we are experiencing here are not to be wished upon the enemy. Animals live better here than humans do here. What is not done here in this "fatherland"! For many, it would be nice to see how their theory is put into practice. But this was not written by a "liberated proletarian", but by a hired qualified specialist, for whom the Soviet government, even for ideological reasons, tried to create acceptable conditions. For two years, the morning in Kharkov began with the cleaning of corpses: "... every night in Kharkov they collect 250 corpses of those who died of starvation or typhus. It has been noticed that a large number of them do not have a liver ... from which they prepare pies and trade them in the market.

According to the plan, the Kharkov plant was supposed to build 2000 tanks in 1932 - more than any, the most developed country in the world, could afford.

Everything according to the plan,  
everything according to the plan,  
We must shit by the kilogram. Eat give  
two hundred grams. How to shit a kilo?

Finally, in April 1932, the BT-2 (this index was assigned to it after the tank was taken out of production) began to enter the troops, but even there it had no equal in terms of the number of breakdowns, including due to the extremely low level of technical training of personnel. The tank weighed 11.3

tons. The hull was an armor box assembled from armor plates 13 mm thick (stern and roof - 10 mm), interconnected by riveting. The nose is narrowed for turning

front steered wheels. Chassis - of course, Christie. A round tower with embrasures for a cannon and a machine gun was installed on the hull. 400 hp engine allowed to accelerate on tracks up to 52 km / h, on wheels - up to 72 km / h; cruising range - 200 km. The crew consisted of two people. Communication facilities were not provided. In general, the BT-2 differed little from the prototype. And just like him, he didn't have

weapons.

The tank was to be fitted with a turret adapted to the project of P.N. Syachintov German 37-mm anti-tank gun of the company "Reinmetall", mastered by the plant number 8 named after Kalinin. But they didn't "master" it on time, and the Hotchkiss guns in the country ended. Most of the "batushki" received Degtyarev's machine-gun spark or remained unarmed.

In the autumn of 1932, it became clear that the Soviet tank industry did not justify the "trust of the Motherland" and the "ten thousand" program failed.

On October 26, by order of the People's Commissar of Heavy Engineering S.G. Ordzhonikidze, the Special Machine Building Trust was created as part of the Leningrad Plant No. 174 named after K.E. Voroshilov, the Krasny Oktyabr plant, the 2nd VATO plant in Moscow and the Kharkov Locomotive Plant. Strategic task: build tanks, build as many as possible, better, more perfect. K.A. became the head of the trust. Neumann. In the same year, an experimental plant "Spetsmashtresta" was formed, which later received the name No. 185 and the name of the suddenly deceased S.M. Kirov. In 1933-1934, repair plants No. 104 and No. 105, the Kiev plant named after V.Ya. Chubar, Kharkov Automobile Assembly Plant No. 48. The organizational measures taken for close cooperation between enterprises, the purchase of the latest equipment, and the improvement of the skills of the workforce yielded results, although in the context of a permanent "storm", handicrafts continued to flourish.

In 1932, 3033 tanks and tankettes were produced in the Soviet Union. In total, there were 4524 units in the troops, including 1036 T-26 tanks and 396 BT tanks. "We can consider the tasks of tank armament of the Red Army resolved quite satisfactorily," Voroshilov announced.

True, the workmanship was no good, and the BT-2 could not be considered as full-fledged combat vehicles.

Another direction in the use of foreign experience was the invitation to the USSR of foreign specialists. So, in order to implement a responsible project to create a particularly powerful positional tank, which was supposed to replace the T-24, in March 1930, a group of German designers was called in under the leadership of the "communist sympathizer" Edward Grote, who formed the backbone of the top secret bureau AVO-5 under factory "Bolshevik". It also included young Soviet engineers N.V. Barykov, L.S. Troyanov, A.B. Gakkel, Ya.V. Obukhov, M.P. Siegel, B.A. Andrykhevich and others. Grote was instructed to create a tank weighing no more than 30 tons, reaching speeds of up to 40 km / h, with an armor thickness of at least 20 mm, armed with one 76-mm, one 37-mm cannon and five machine guns. Technical expertise was to be carried out by representatives of V.I.

Zaslavsky and S.A. Ginzburg. Supervised the OGPU project: firstly, foreigners are involved, and secondly, "the tank should come as a surprise to all possible enemies." No expense was spared, and by the summer of 1931 a completely original, unparalleled combat vehicle with extremely powerful multi-tiered weapons was manufactured.

The TG tank had a fully welded hull with frontal armor thickness

up to 44 mm, onboard - 20-24 mm. A large main turret was located on the hull, in which three Maxim machine guns in ball mounts and a 76-mm PS-19 gun, created by Syachintov on the basis of the Lender anti-aircraft gun, were installed. A 37-mm PS-2 cannon was placed in the upper, commander's tower, which could also fire at air targets. In addition, two DT machine guns were located on the sides of the hull.

The undercarriage consisted of five large-diameter rollers with semi-pneumatic tires and individual spring suspension, four support rollers, tracks of the original design and was covered with armored screens. It was planned to install a special 250 hp Grote air-cooled tank engine on the tank, but in the end they used the aircraft M-6. The control was carried out from the steering wheel "like an aircraft" through pneumatic servos. Combat weight - 25 tons, range - 350 km, the crew consisted of 5 people.

On tests, the TG showed a speed of 34 km/h, a very smooth ride, good cross-country ability, maneuverability and many design flaws, quite natural for a prototype. However, further work was stopped due to the complexity of serial production, unthinkable for the domestic industry, and the extremely high cost of the machine, which cost the treasury one and a half million rubles - the cost of 25 "batushki". The services of the designer Grote were refused, and the Grote tank was sent to the warehouse.

Fortunately, the Poles did not attack the "fatherland of the working class of all countries". Indeed, in August 1931 they bought 38 6-ton Vickers from England. But, not knowing the secrets of organizing socialist competition and Stakhanov's methods of labor, the serial production of their own version of the tank called 7TR could only be established in 1935, and before the start of World War II, only 135 units were built in a two-turret machine gun and a single-turret cannon (37-mm "Bofors") options. By the way, with a 6-cylinder diesel engine of the Saurer brand with a power of 110 hp. They didn't have any fast tanks at all, since the mercantile Christie raised such a price that the Polish representatives were forced to cancel the deal and bow out. The Polish government did not think of getting more money through the use of free labor of its citizens or the sale of paintings from the Belvedere.

Not very much in the Kremlin and were afraid of the notorious "intervention". All horror stories about an external threat were intended for internal use and substantiation of the theory of exacerbation of the class struggle. So, in 1932, they easily began to decommission all - almost a thousand units - MS-1 tanks, including the 1931 model. Hotchkiss guns were dismantled from them and installed on the T-26. Some of the vehicles, having removed the engines, were used in fortified areas as fixed firing points. Meanwhile, in France until the mid-30s

years, the basis of the tank fleet was made up of various modifications of the Renault ET-17, and even by the beginning of World War II, they were in the army in the amount of 536 units. As of June 22, 1941, our historians do not count a single "small escort tank" in service with the Red Army, although all Romanian Renaults diligently add to the "fascist hordes".

But still I had to fight - as usual, with my own people. IN

In 1932-1933, more than two thousand armed uprisings against forced collectivization took place in the USSR, suppressed with an iron fist. Bread was raked clean from the village, in areas that did not fulfill the grain procurement plan, bacon, onions, beets and pickles were taken away. As a result of another vivisection arranged by the Bolsheviks, a mortal famine began in the country.

Driven to despair, the grain growers, having eaten everything "what a person is not supposed to eat, starting with carrion and ending with oak bark", maliciously stole the harvest grown by them. The authorities responded with the "law on three spikelets" of August 7, 1932; in the first year and a half, 125 thousand "plunderers of collective farm property" were convicted and every fifth was shot. The fields and grain markets were adorned with traditional accessories of the Soviet landscape - fences, towers and figures of a "man with a gun". It was necessary to protect not only the grain from the collective farmers, but also the peasants themselves, who, fleeing from hunger, in violation of the Stalin-Molotov decree of January 22, 1933: "Die on the ground!" Counter-revolutionary crawled from quarantine zones to cities, breaking through the cordon of troops OGPU. And "Soviet robbery" exported 34 million centners of grain, tens of thousands of tons of fish and meat and dairy products.

In his reply to the writer M.A. To Sholokhov, Stalin himself called the lawlessness that was happening in the country a "war", in which both the Workers 'and Peasants' Red Army and the "legendary commanders" of the Civil War - S.M. took an active part. Budyonny, I.E. Yakir, I.P. Belov, I.F. Fedko, N.D. Kashirin.

Millions died in the war of 1929-1933. Only in Ukraine, up to 20% of rural residents died, the population of Kazakhstan was halved, it was even worse in Central Asia, dozens of "malicious bandit" auls of Chechnya and Dagestan were destroyed by artillery fire and aerial bombardments.

Nothing could prevent the movement "at full speed along the path of industrialization." However, Stalin nevertheless realized that 40,000 tanks a year was too much, and one could overstrain. Therefore, they began to do 3000-4000 each, while not forgetting the strict provision of the conditions so that "the Red Army would be able to fight against any coalition of world capitalist powers and inflict a decisive defeat on the armies of these powers" and "securing for the Red Army the first place in the world in all decisive types of means of struggle.

In 1933, the number of BT tanks in service with the Red Army was increased to 624 units, of which the long-awaited 37-mm B-3 (5K) "high power" cannon with an initial projectile velocity of 800 m / s and an aimed fire range of 600 meters was installed on 208 of them. . The rest were equipped with a coaxial DA-2 machine gun mount. In the summer of the same year, Kharkiv residents began to install BT on the hull

an enlarged turret with a new 45-mm semi-automatic gun 20K ("K" - Kalinin) with an effective range of 1200 meters and a DT machine gun coaxial with it. The riveted tower - a product of the Izhora plant - had a cylindrical shape and a stern niche, in which a radio station was placed on the commander's tanks, and part of the ammunition load on the line tanks. A handrail transmitting antenna was installed around the turret of the command tank, as it turned out in real combat conditions, making such a tank a prime target for artillery

enemy. The design of the chassis remained unchanged. Combat weight increased to 11.5 tons. The machine received the name BT-5 and over the next year and a half was replicated in the amount of about 1900 copies. The T-26 was armed with the same tower, slightly shifted to the left. By the way, S.A. Ginzburg from the very beginning suggested making the tank single-turret, considering such a scheme more preferable in terms of mass, cost and fire maneuver, but the military leaders really liked the ability to fire in all directions at the same time.

The Izhors finally launched the production of high-quality 13-mm armor of the PI brand (then IZ). At the same time, the mass of the tank increased by 1200 kg, its engine was modernized, increasing its power to 95 hp. The speed of the car remained the same, and the power reserve almost doubled. The two-tower version continued to be produced until the end of 1933, with a total of 1,722 units built. Fifty more vehicles were produced in the chemical (flamethrower) version: the left turret was removed, and a flamethrower coaxial with a 7.62-mm machine gun was installed in the right one.

In addition, in 1933 the Red Army received new types of combat vehicles - floating, medium and heavy tanks.

And — che oe  
\\u003d aa eeichiiiiia write izh "- th

, RE GON CHE

aa E N ii

Tank BT-5

IE,  
mind

Tank T-26 model 1933 The world's first truly amphibious tank was designed and built by Vickers-Armstrong in 1931. The buoyancy of the tank was ensured by the low mass and trough-shaped hull with balsa floats mounted above the tracks. The chassis was taken from a 3-ton tractor of the same company. Outboard motor "Medusa" with a power of 90 hp allowed the car to reach speeds on land up to 64 km / h, afloat - 9.5 km / h. The armament consisted of one machine gun mounted in a turret shifted to the port side, borrowed from

b-ton tank. The British War Department refused to buy amphibians, but the USSR People's Commissariat of Defense purchased eight vehicles. By this time, based on information obtained from abroad, we had already built a prototype of the T-33 amphibious tank, which was an almost exact copy of the English prototype, since the exact same tractor was produced in the Soviet Union. However, he did not go into the series, just like the T-41 tank designed by the design bureau of the 2nd VATO plant. In parallel, under the leadership of M.P. Siegel at the Voroshilov plant, a prototype T-37 was created with a running gear copied from the Krupp "tractor" (two two-roller carts with leaf springs on each side). He went to the test in July 1932. Just in time, in June 1932, floating Vickers arrived from England.

Having summarized all the available materials, the Department of Mechanization and Motorization decided to develop a new amphibious tank to replace the T-27 tankette, similar in layout to the T-41, but with a suspension from the T-37, and immediately adopted the virtual machine into service with the Red Army. The 2nd VATO plant (No. 37) was supposed to organize the release; N.N. was appointed chief designer. Kozyrev. The plan for the production of a T-37A tank for 1933, launched by the Spetsmashtrest plant, ordered the construction of 1200 vehicles. However, only 138 copies were able to be made. The reasons are the same - short deliveries from subcontractors, antediluvian equipment being worked out on the go

technological process, poor organization, marriage. Due to the unsatisfactory workmanship and many technical flaws, the entire first batch of machines was sent to educational institutions.

The hull of the T-37A tank had a riveted-welded construction. The thickness of the armor ranged from 4 to 8 mm. Floats were attached to the sides, although they were filled not with expensive balsa, but with cork. Later they became

to make hollow, it turned out even cheaper. In a rotating cylindrical tower, shifted to the starboard side, was installed

DT machine gun in a ball joint. Ford-AA engine, also known as GAZ-AA, with a power of 40 hp. was located along the starboard side, the transmission was located in front. The caterpillar chain was made of ductile iron. Movement afloat was provided by a propeller with rotating blades, this made it possible to abandon the reverse mechanism to ensure reverse; turning was carried out with the help of the steering wheel. With a combat weight of 3.2 tons, the tank developed a speed of 38 km/h on land and up to 6 km/h afloat. The power reserve reached 230 km. Crew - 2

person.

In total, 1909 linear and 643 radium T-37A tanks were manufactured in 1932-1936. They say there was also a "chemical" option.

E  
I  
—ofyy—t

\_\_\_\_\_ | . — Not == heh E.

B = 5 holes y | Hell  
5 A E



r3 Sh r l ©  
\ in RI - <

| d | 5 #. E 4-5. «® 55 \ g  
oe \u003d NM, No.  
7 tm  
E\u003e a Ca.

o FOR + a #5" 22 a.  
6 = O < r

The layout of the amphibian "Vickers"

Soviet small amphibious tank 1-37A During the second trip to England, S.A. Ginzburg, acting like a real Stirlitz, "copied" a prototype of a 16-ton three-turreted Vickers Ab tank at the training ground and obtained its main characteristics through undercover means. The Britons categorically refused to sell the car, but our military was already burning with the desire to have such a car "to overcome the enemy's heavily fortified defensive lines." "It is easy to understand," Tukhachevsky convinced, "that the two-tower and three-tower schemes were adopted by the British because they are very promising and most beneficial for overcoming enemy defenses among their infantry." By July 1931, the Tank and Tractor Design Bureau, under the leadership of Ginzburg, developed a project for a 16-ton T-28 tank with a long range, similar in layout to the English model, using the ideas embodied in Christie's machines, Vickers and German "gross tractors" .

After the approval of the project, the team of the Experimental Design Engineering Department of Plant No. 1774, the former AVO-5, began to work on the T-28. N.V. became his boss. Barykov, who gained experience from Ewald Grote, as a leading designer, is a talented engineer of the old

school N.V. Zeitz. Suffice it to say that Nikolai Valentinovich knew how to use a slide rule: "Outwardly, he was a man of average height, a little over fifty years old. Very intelligent, humble. He was never rude, spoke very quietly, with

smile, and his smile charmed everyone. He often sat next to the developer and analyzed his design not only from the point of view of theoretical mechanics and strength of materials, but also considered

possible physical phenomena and thermal processes in a unit or unit. At the same time, he always gave a calculated analysis. rarely used

reference books. When reasoning, he himself derived a simple and convenient formula for calculation and used it. By the spring of 1932, a prototype was made. Due to the workload of plant No. 174 with the program for the production of light tanks

T-26 mastering the serial production of T-28 in November was assigned half

the idle Krasny Putilovets plant, where SKB-2 was created under the leadership of O.M. Ivanova. To provide

organizational assistance to the plant was seconded by the head of OKMO N.V. Barykov. According to the test results of two prototypes, almost all nodes were radically redesigned.

By May 1, 1933, the plant produced the first 12 tanks that took part in parades in Moscow and Leningrad. By the end of the year, 44 machines had been manufactured.

The hull of the tank was welded from rolled armor plates 20-

30 mm. The main tower, equipped with a suspended floor, housed

course machine gun DT and short-barreled (16.5 calibers) 76b-mm gun

KT-28 with muzzle velocity of 381 m/s and effective range of 2000 meters is a tank variant of the 1927 regimental gun. The gun had low ballistic characteristics and rate of fire (due to a non-automatic piston breech) and was allowed to arm tanks temporarily, before P.N. Syachintov PS-3 model 1933 with a muzzle velocity of 520 m/s and a semi-automatic shutter. However, in five years of serial production, the Kirov Plant made only 12 PS-3s.

And

\*&-A "AA-A\*A" - AAA s gave Allah: E m \  
ZAZAZA-AZAZAE 25 "in ZATATAZAZ AAA kt \u003d O 9-0

A SII GUU IK  
"= ARILRACRO 547:47

Soviet medium tank 1-28 For firing backwards in the aft niche of the T-28 turret there was a ball mount for a spare machine gun. A radio station '771-TK with a handrail antenna was mounted here on command vehicles. Ahead and below the main tower, small turrets from the T-26 tank were symmetrically installed, armed with machine guns with a horizontal firing angle of 165 degrees. The tank was equipped with a 12-cylinder M-17L engine, "nee" a German BMW-UT aircraft engine, with a power of 500 hp, mastered by the Rybinsk Motor Plant. The suspension consisted of two carts suspended from the body. Each cart included three carriages interconnected by levers, and each carriage included two pairs of rollers connected by balancers. With a weight of 27.8 tons, the tank reached speeds of up to 45 km / h on the highway, had a cruising range of 220 km and a crew of 6

Human.

At the same time, in the bowels of the OGPU, under the leadership of the exposed "member of the Industrial Party" N.A. Astrov developed a special tank

appointment of PT-1 reserve of the High Command. Essentially, it was

enlarged BT-2, which they tried to teach to swim. The result was a car weighing 14.2 tons, armed with a 45-mm cannon and four machine guns, with a crew of four. The prototype did not demonstrate particularly outstanding qualities, but floated

Badly.

Finally, the T-35 heavy tank, the progenitor of which was the English A1E1 Independent, created by Vickers-Armstrong in 1926, was intended to break through the "especially fortified defensive lines". The tank had five turrets and was a variant of a land-based battleship, theoretically capable of delivering massive and highly maneuverable fire in all directions. The main turret contained a 47-mm cannon, and small turrets located around it contained machine guns. The thickness of the frontal armor reached 28 mm. With a mass of 31.5 tons, the tank developed a speed of 32 km / h.

In 1932, a team led by N.V. Barykov and M.P. Siegel developed technical documentation for organizing the production of a heavy breakthrough tank. After the manufacture of two prototypes at plant No. 174, demonstrated at the May Day parade of 1933, mass production was entrusted to Kharkov plant No. 183, which assembled four more cars by the end of the year.

The T-35A heavy tank was a five-turret combat vehicle weighing 37.5 tons with a two-tier armament arrangement. It was complex in structure and rather primitive technologically.

A welded and partially riveted hull made of armor plates 20 and 30 mm thick was divided by four bulkheads into five isolated compartments: front turrets with a driver's seat, main turret, rear turrets, engine and transmission turrets. In the central upper turret, unified with the turret of the T-28 tank, a 76-mm cannon with a length of 16.5 calibers and a machine gun were installed. Another machine gun could be installed in the aft niche, a radio station was also attached here. The department of the main tower was occupied by four people - the commander, the tower, the radio operator and the minder. The main tower was equipped with a suspended floor.

Two diagonally located medium turrets with a 45-mm cannon and a machine gun were similar to those used on the BT, only without the aft niche. Two machine gun turrets - identical to the small turrets of the T-28 tank. The front and rear towers communicated in pairs with each other. The rotation of the towers, including the main one (with all the equipment weighing 1870 kg), was carried out manually using a stepped mechanism.

The undercarriage, covered with a 10-mm screen, was a modified version used on the Krupp "grosstraktor": four bogies with two road wheels each, six upper and one front support rollers, a "sloth" with a screw mechanism for tensioning the chain in front, in the stern - "asterisk" (drive wheel). The tank was equipped with an M-17T engine with a power of 500 hp, which made it possible to reach speeds of up to 30 km / h on the highway, and about 12 km / h on the ground. The pneumatic control system developed by Grote was abandoned. Cruising on the highway was 120 km. The crew - 11 people, who, despite the impressive size of the car, barely fit in it.

Tanks T-28 and T-35 entered service with individual tank

regiments of the RGK, which in December 1935 were deployed into separate heavy tank brigades. If the first turned out to be quite a decent machine, then the second remained extremely difficult to manufacture, unreliable and difficult to operate: the engine overheated, the gearbox broke, the tracks were torn. Not to mention the cost, well

Yes, we will not stand up for the price.

and "E  
eee

French heavy tank 2C For most of its service, the "thirty-fifths" were either repaired or defiled in parades, personifying the power of the Soviet Country with a formidable appearance. They are usually compared with the same

"Independent" and French tanks of the 2C series, proving that "our equipment" was much better. In fact, there is nothing to compare, since no one built such machines in the 30s. For uselessness. The British did not accept them into service with their army. Possessed

decent mobility "Independent" remained in a single copy and after six years of experiments and improvements went straight to the tank museum.

As for the 70-ton ECM 2C tanks, the French began to design this relic of the First World War in 1917 to overcome the Hindenburg Line, planning to build 300 "breakthroughs". But the war ended earlier, as a result, until 1923 only 10 cars were made. They were inactive, on the highway they developed a maximum speed of up to 12 km / h, carried armor up to 37 mm thick, were armed with one 75-mm gun and four Hotchkiss machine guns located in the bow and stern towers, as well as in the side

body walls. Moreover, the towers could not conduct circular fire. In the 1920s, on some vehicles, the 75-mm cannon was replaced with short-barreled 105-mm and 155-mm howitzers, new engines were installed, and the suspension elements were strengthened. The tank was serviced by a crew of 12 and was more suitable for strengthening the defense than breaking through it. But, by the way, these archaic machines had an electromechanical transmission. The concept of a bulky, weakly armored giant bristling with cannons and machine guns, which was a slow-moving large-sized target for enemy artillery, had by this time exhausted itself in favor of a maneuverable, mobile, well-protected single-turret vehicle. Theoretically, the T-35 could concentrate the fire of two guns and three machine guns in any direction. It remained unclear how to achieve this in a real combat situation? Specifically, how can the tank commander manage all this "creeping arsenal", monitor the situation, give commands to the driver, turret, target designation to the other four turrets, while firing from his service "three-inch gun"?

= t = |

EN == "& O f =  
p -> -s— | NOT  
RONNIE digs they 2:5 rocket] t | rick bit O A  
SIE o. O ". te —: E r Ch. No.  
her. : : XYA, 4  
from =. 7 5 K d EE 37 V azhya E.  
We m: mine

=. Hy =.  
Soviet heavy tank 1-35A In addition, the  
ideas of the Soviet commanders about a "especially heavily fortified defensive zone"  
look rather strange. For example, the German 37-mm Rheinmetall anti-tank gun, compact and  
undersized, semi-automatic with a rate of fire up to 15 rds / min, was born in 1926,  
was secretly tested in the USSR, was in service with the Red Army and, of course, the  
Wehrmacht and pierced 30 mm armor from a distance of 500 meters. By 1937, the same and more  
powerful anti-tank guns were in the Polish, Czechoslovak, French armies. The first serial T-  
Z5A had not yet been assembled, when, at the insistence of the Headquarters of the Red  
Army and the UMM, it was decided to replace it with an even more powerful monster weighing  
90-100 tons. The car ordered by M.N. Tukhachevsky and I.A. Khalepsky, received the T-39  
index and was supposed to have 152-mm and 107-mm guns in four turrets, 40-60 mm armor,  
and a 1000 hp engine. However, after examining the made models, Comrade  
Voroshilov began to doubt whether "we need such a combat vehicle at all" worth 3 million rubles?  
(During this period, L.N. Troyanov put forward his project of a heavy tank for the  
competition, as the admiring biographer of the designer reports, "still has no analogues in the world":  
"He proposed to assemble a tank weighing 300 tons from two tracked "semi-tanks" and a transverse  
platforms with a main gun turret and a 203 mm howitzer Each "half-tank" had two  
"small" gun turrets with 152 mm guns

Combined into one huge machine, all three elements formed a 4-track unit 17.5 m long, 6.52 m  
wide and 5 m high, protected by 150 mm ship armor. As a power plant, two steam engines of  
1500 hp could be used. or diesel-electric units from a submarine. Each "half-tank" had the  
opportunity to act independently (and the transverse platform with the "main howitzer"  
too?). These three working elements (on four tracks!) Could also be mounted on railway platforms  
and form an armored train. This is somewhat reminiscent of Dyrenkov's fantasies. It is only unclear  
how it was conceived with "underwater patency">.)

The design of land dreadnoughts was stopped and until 1939 in small batches - from 7 to 15  
tanks per year - they continued to produce the rapidly outdated "thirty-fifths".

In 1933 it was considered that the "System" of 1929 had been successfully  
completed. The Red Army had five main types of tanks: the small reconnaissance T-37A,  
replacing the T-27 tankette,

the T-26 light escort tank, the BT operational light tank, the T-28 high-quality reinforcement  
medium tank and the T-35 special-purpose heavy tank. However, the very first summer  
exercises of the first

mechanized formations of the Red Army revealed the shortcomings of almost all tracked tanks. In practice, the red commanders faced the problem of operational maneuverability: the engines overheated and broke down, the transmission flew and the tracks were constantly torn. For example, in the 45th mechanized corps, a quarter of the combat vehicles failed in one day of maneuvers due to a broken caterpillar. Crazy repair crews did not have time to fix the breakdowns. Representatives of various design bureaus were seconded to military units, helping personnel to master the operation of new equipment. But the tracks still broke, simply because they were bad tracks, made according to outdated technologies, and also carelessly. Only the "changed shoes" BT, having laid the tracks on the shelves, proudly rushed past the swearing colleagues.

As already mentioned, there were two ways to solve the problem: to increase the resource of the tracks or to build machines with a double propulsion. The vast majority of tank builders in the 30s made a choice in

favor of the first way. So, already the 6b-ton Vickers, purchased by the Soviet side in 1931 and copied exactly, had one significant difference from the T-26 - its "native" small-link tracks made of manganese steel withstood 4800 km of run. On the 16-ton Vickers, this figure reached 6,000 km. In addition, trucks and platforms were widely used to deliver light combat vehicles directly to the front line. But the secrets of casting high-quality tracks and thermal hardening of fingers were not given to the Soviet industry. Therefore, for the T-26 tank, the caterpillar resource before failure was 40-60 km, for the T-28 - about 400 km. And it turned out to be more difficult to develop a decent truck than a tank.

In the summer of 1933, when adopting the tank building program for the second five-year plan, and stating with satisfaction that the "special production base for tank building" ensures the production of 11,000 tanks per year, the Soviet leadership made two fundamental decisions. First, transfer almost all tanks to

wheeled caterpillar; secondly, all machines should be equipped with diesel engines, as the most preferable in terms of economy and fire safety.

Instead of the existing two light vehicles - T-26 and BT - the head of the UMM (soon renamed the Armored Directorate) I.A. Khalepsky proposed to introduce a single diesel wheeled-tracked tank T-26A. Instead of the medium T-28, a new, also wheeled-tracked, "operational" vehicle T-28B with a powerful diesel engine, and also to produce a small series of a cheap "mobilization tank" T-24A. The BT brand cars were supposed to be discontinued, and the Kharkov plant was to be reoriented to the production of a wheeled-tracked-floating PT-1A.

By this time, Kharkiv residents launched the first prototype of a 12-cylinder "high-speed diesel" BD-2 with a rated power of 400-420 hp on a test bench. and reported that this machine, built "entirely from Soviet materials", is one of the best in the world in terms of its performance. In November 1933, the engine was installed on a tank and an artillery tractor, and a year later, two diesel BT-5s were shown at a military parade in Moscow. At the end of 1934, a government decision appeared: to start - in parallel with fine-tuning -

preparation for the serial production of tank diesel engines, for which purpose to expand the construction of new workshops at KhPZ and create a production facility capable of ensuring the production of 10,000 engines per year. Enormous funds were allocated for the purchase of machine tools, equipment, technologies, patents in foreign engine-building centers. A group of designers led by G.I. Aptekmana began to study the aviation version of the BD-2A.

By 1936, it was planned to have five main types of tanks in production - reconnaissance T-37A, combined arms T-26A, operational PT-1, high-quality reinforcement tank T-28B, powerful special purpose tank T-35A, with its subsequent replacement with a new model. In addition, in the system of armored weapons of the Red Army there should have been flamethrower, sapper and control tanks, armored vehicles of reconnaissance and "combat" types, self-propelled artillery mounts based on a combined arms tank, railway combat vehicles, "high-speed" and "powerful" tractors, ammunition transporters and armored personnel carriers for infantry on the chassis of a light tractor. We note right away that both general tasks remained

unfulfilled, like almost everything else.

Serial production of diesel engines, despite the availability of prototypes, failed to be established over the next five years: the engine consumed oil and fuel in incredible quantities, mercilessly smoked, vibrated, spat gases and self-destructed. As for the wheeled-caterpillar mover, it was a dead end road. No one followed this path, except, perhaps, the Poles. The British, interested in Christie's suspension, purchased chassis samples from the inventor, but built their own cruising tanks exclusively on caterpillar tracks.

German tank T-35. In July

1934, when the number of tanks in the Red Army exceeded 8000 units, the serial T-35 rolled off the assembly line in Germany. T-35 - the first swallow of officially non-existent

Panzerwaffe. When designing the chassis, Krupp engineers

Hogelleg and Velfert focused on the technical solutions used in the "small tractor" and the English Cardin-Loyd tankette:

mixed suspension - front roller on an individual unit with

coil spring, the rest are blocked in pairs with leaf springs. The rear roller played the role of a "sloth". The bogies of the rollers were connected by a stiffening beam. The tank was equipped with a 57-horsepower four-cylinder air-cooled engine "Krupp" MZO05. The power box is mechanical, with a five-speed gearbox and side clutches as turning mechanisms. The hull was assembled by welding from rolled armor plates - 13 millimeters of chromium-nickel steel. In the turret, shifted to the starboard side, there was a twin installation of 77 / 92 mm Drese MS13 machine guns.

The tank was served by two crew members, had a "height" of 172 cm, weighed 5.4 tons, developed a speed of 37 km / h, and had a cruising range of 145 km. It was transported over long distances by a truck tractor equipped with a ramp, or in a trailer. A year later, a weak engine

replaced by a Maybach six-cylinder engine with a power of 100 hp, achieving an increase in speed to 40 km / h. But for this it was necessary to lengthen the hull and add another roller. As a result, the weight of modification "B" increased to 5.8 tons, although the armament and armor remained unchanged.

From the beginning of R7. T - in fact, a tankette - was considered by the German generals as a training vehicle "until the battle tanks are ready."

"No one, of course, thought," recalls G. Guderian, "that with these small training tanks we would one day have to engage the enemy." However, it so happened that by the beginning of World War II, it was the machine-gun Panzer 1 that was the most massive tank of the Wehrmacht, and it also formed the basis of the fleet of German tank forces during the French campaign. On September 1, 1939, the German troops had 1145 such vehicles.

On August 2, 1934, the President of the Weimar Republic, Field Marshal Hindenburg, died. An hour after his death, the Nazi government issued a decree merging the offices of president and chancellor. The army was sworn in with an oath of allegiance personally to Adolf Hitler. He officially became "Führer and Chancellor of the German Nation".

A number of firms received the task of designing 10-, 15- and 20-ton tanks. In 1935, Hitler denounced the Treaty of Versailles and publicly announced the creation of tank units.

Following this, the National Socialists began to implement their four-year plan.

In the USSR, to the fanfares and toasts of the delegates of the congress of the "winners", the second five-year plan began, the purpose of which was to further strengthen the Land of Soviets "as a support base for the world proletarian revolution." So.

The "mobilization" tank T-34 weighing 4.7 tons was developed back in 1932. It was practically a copy of the T-37, but it did not swim. On the other hand, the tank had a simpler design, enhanced armor protection to 10 mm, decent mobility, an engine of 70 "horses" and in the future (the prototype had one machine gun) more powerful than that of the "floater", armament - 20 mm automatic gun. In the event of war, the country's automobile plants were supposed to start mass and cheap production from the mastered units. However, at the end of 1934, work on preparing for the production of a "mobilization tank" at the AMO-ZIS plant was completely stopped.

The idea to increase the "operational mobility" of amphibious tanks also failed. Initially, their transfer was supposed to be carried out in the bodies of trucks, but the domestic industry could not master the production of such trucks. Then it was decided to develop a wheeled-caterpillar floating vehicle under the T-43 index, designed to equip the "reconnaissance units of motorized mechanized troops." It was made on a competitive basis by two enterprises at once - the Leningrad plant No. 185 named after Kirov and Moscow No. 37 named after Ordzhonikidze. The first project was developed by engineers Siegel, Simsky and Maksakov under the guidance of



Ginzburg, the second - by the designers Sazonov, Brusentsov, Kozyrev, Zorin under the leadership of Astrov. It was supposed to use the Ford U-8 engine, the production of which was mastered by GAZ, as the engine.

Both tanks were assembled by the spring of 1935, both with a GAZ-AA engine (since that Ford was stubbornly not being mastered, another Ford was used), mounted across the hull in the rear, with the same armor 4-10 mm thick and a DT machine gun in a rotating tower.

T-43-1 was a machine weighing 3.6 tons. The undercarriage consisted of three pairs of large-diameter road wheels, two drive and two guide wheels, the transmission was borrowed from a GAZ truck. To move through the water, instead of a propeller, transverse blades on the drive wheels were used.

The Muscovite tank - T-43-2 - weighed 3.7 tons, had a similar undercarriage, a traditional propeller for movement afloat and a turret for an anti-aircraft machine gun on the roof of the tower.

Tests have shown that both machines are equally unsuitable for adoption. Both were extremely complex in design, expensive to manufacture and unreliable in operation. In addition, there were individual shortcomings: the first sample did not swim well, the second did not want to ride on wheels. However, the designers understood the futility of this direction even at the stage of receiving the assignment.

for design. Therefore, at the end of 1935, work on amphibious wheeled-tracked tanks was finally curtailed.

However, even before this decision was made, the Astrov team, on its own initiative, worked out a version of a tracked vehicle based on the T-37A, which would be more reliable, have a greater power reserve and buoyancy, and by June 1935 produced the first sample.

The new tank was similar in layout to the T-37A, only the driver's seat was now moved to the starboard side, and the turret to the left. It had a wider hull, but without fender floats, retained almost the same weight, identical armor, engine and transmission from the GAZ-AA car, turret design and armament - a 7.62-mm DT machine gun. The undercarriage underwent minor changes, to which an additional pair of supporting rollers was added, the differential was replaced with side clutches and the design of the bogies was simplified.

On February 29, 1936, the tank under the T-38 index was adopted by the Red Army to replace the T-37A, mass production began in March 1937. The car was much more expensive than the T-37A, and, as operating experience showed, it sank more readily and more often. Already in the fall of 1937, the T-38 tank, due to the many defects identified during operation, was declared incapacitated and its acceptance was limited.

In just six years, the troops received about 4,000 floating vehicles.

The T-37A and T-38 tanks were in service before the start of the war with Germany and were used as reconnaissance tanks. In particular, in 1937 the staff of the mechanized corps included 6"7 T-37 tanks.

They were also in the staff of tank battalions of rifle divisions and in the reconnaissance companies of individual tank brigades (the staff of a tank company is 22 vehicles). One of the two squadrons of the mechanized regiment of the cavalry division was equipped with 30 amphibious tanks. On the eve of the war, a tank regiment of 50 T-38 units was part of the staff of the airborne corps.

Soviet amphibious tanks took part in the fighting in the region of the Khalkhin-Gol River (out of the 22 units available, 17 were lost), during the Liberation Campaigns in Western Belarus and Western Ukraine (when it turned out that when driving off-road, the floaters lag behind "foot infantryman" and lose caterpillars), during the war with Finland. They did not justify themselves due to insufficient cross-country ability, maneuverability, a small reserve of buoyancy, weak armor protection and weapons. Already in the Finnish campaign, the T-37 and T-38 were used mainly to guard headquarters, transport ammunition, evacuate the wounded, as tractors and for communications.

In the work of the remaining design bureaus until 1937, the transfer of existing combat vehicles to a double propulsion unit also remained the general line. Since 1932, the team of the nugget Dyrenkov has been dealing with the problem of "adapting" the T-26 tank to moving on wheels, but his project was recognized as complex and illiterate.

In the Academy of Motorization and Mechanization, under the leadership of M. Danchenko, in 1933 they developed the KT-26 project with a five-speed gearbox and a running gear with three pairs of road wheels instead of four, which combined a wheeled and caterpillar drive. The project was rejected even without the production of a prototype.

The design bureau of the Voroshilov plant carried out design work on the T-26A machine, which received the T-46 index. The project was carried out under the leadership of S.A. Ginzburg, the lead designer was V. Simsky. The design of the tank involved the installation of either a DT-4 diesel engine or an MT-4 gasoline engine of the same size with an 200 hp power. Both motors were designed at the same factory. The layout of the T-46 was not much different from the "twenty-sixth". It was larger in size, carried a more spacious turret, in which a 76-mm PS-3 cannon could be installed in the future. The prototype was built in 1935 and exceeded the original version in weight by one and a half times. As a result, the gearbox and final drives could not cope with the increased loads. Work on the T-46 was continued by the design team of the Kirov plant under the leadership of O.I. Ivanova.

On February 29, 1936, by a decision of the STO, the T-46-1 wheeled-tracked tank was adopted by the Red Army, which went into serial production. It weighed 17.5 tons (recall that the T-26 - 9.2 tons), received a new air-cooled engine MT-5 with a capacity of 330 hp, armor reinforced to 15 mm (driver's shield - 22 mm), an enlarged turret with the possibility of installing a "three-inch gun", a pneumatic flamethrower KS-45. The tank proved itself very well in the army, was easy to operate, had excellent mobility and better cross-country ability on tracks than the BT. That's just the price he caught up with the three-tower T-28. Therefore, only 4 units were mass-produced. The production of the T-46-1 tank and all work on it were stopped at the beginning of 1937.

At the same time, the technical department of the Economic Directorate of the OGPU, using the prison design bureau under the leadership of Astrov and with the participation of OKMO, tried to improve the PT-1. A sample of the PT-1A tank was manufactured at the Experimental Plant of Spetsmashtrest under the guidance of the lead engineer N.V. Zeitz, however, tests conducted in October 1934 showed that the game is not worth the candle here either.

Particular hopes were placed on the wheeled-tracked version of the three-turreted T-28 tank, which, with a combat weight of 17.5 tons, was supposed to reach speeds of up to 70 km / h, have 20-mm armor and armament from a 76-mm cannon and four machine guns. They decided to take the PT-1A chassis as a basis, but without swimming "accessories". The lead designer of the maptina was N.V. Zeitz. The reference model of the T-29 tank was made at the Kirov plant in 1936, and it was planned to launch the vehicle in a series from next year. However, it did not come true. The new tank from the T-28 differed only in that it had better mobility and maneuverability on wheels, but it turned out to be complex and unreliable, and cost almost twice as much.

The main combat vehicles of the Red Army remained the T-26 and BT, well mastered by industry. They managed to make them not only cheaper, but, most importantly, significantly improve their quality. In 1935, Garfield steel casting was mastered in the USSR, tracks began to be manufactured by hot stamping, experiments on hardening caterpillar pins with high-frequency currents ended with success, respectively, it was possible to increase the resource of tracks by an order of magnitude. Plant No. 174 named after Voroshilov continued to produce the T-26 tank, improving its combat characteristics.

At the end of 1935, an additional gas tank was installed, which made it possible to increase the power reserve to 240 km, and in the aft niche of the tower, according to the order of the People's Commissar of Defense, they began to mount a ball mount with a "Voroshilov" DT machine gun. Changes were made to the chassis. The use of new tracks gave an amazing result: a prototype on caterpillars covered 200 km without a single breakdown. The tank was distinguished by ease of control and ease of operation. The hull began to be made with the use of electric welding, they managed to master the stamping of the gun mask, they began to mount two powerful searchlights above the gun barrel - the so-called combat light headlights, which gave the tank a characteristic, recognizable look. The weight of the machine has increased to 9.6 tons. In 1935-1936, 55 copies of remote-controlled "teletanks" TT-26 were produced, which were equipped with poisonous substances launchers and a removable flamethrower. In 1937, light and cheap bakelite gas tanks were developed, a rotating turret for an anti-aircraft machine gun appeared on the roof of the tower, and a TPU-3 intercom was installed in the tower itself. The vehicle received a new conical turret welded from 15 mm armor plates. But in general, the design has exhausted itself.

At the same time, at the KhPZ, with the warm support of the military, who dreamed of having an "artillery escort tank" in the mechanical units, work was underway to install a 76-mm gun on the BT, which eventually led to the appearance of the BT-7 vehicle. In order to supply reinforced weapons, the Kharkovites expanded the bow of the hull to 440 mm, which made it possible to move the driver and controls forward and improve visibility. To the right of the driver, a fourth crew member and a course machine gun were provided. Many armor plates were connected by welding, and the upper front was 22 mm thick.

Instead of the discontinued M-5 engine, the M-17T was installed, limiting its power to 400 hp. An additional fuel tank with a capacity of 480 liters was placed in the stern, bringing the cruising range to 500 km.

Since the new tank gun was delayed, the "seven" at the beginning of 1935 went into mass production with a turret from the BT-5 with a 45-mm 20K gun and a DT machine gun. The course machine gun was abolished. The car weighed 13 tons and developed a speed of 73 km / h on wheels and 53 km / h on tracks.

Since 1937, the production of BT-7 with a conical turret began. An anti-aircraft machine gun was installed on some of the machines. On line tanks there was a machine gun in the aft niche. The four-speed gearbox has been changed to a three-speed one. The thickness of the frontal armor increased to 22 mm, the combat weight - up to 13.8 tons. On the basis of the BT-7, they tried to create a bridgelayer, an armored personnel carrier, rocket, remote-controlled, chemical and flamethrower tanks, a minelayer and a minesweeper, a self-propelled artillery mount, but nothing could be brought to mass production. The design of the flying transforming tank LT-1 with retractable wings, tail and folding propeller was especially original. The author of the idea, engineer M. Smalko, promised that this miracle weapon would flutter at a speed of 200 km / h at a distance of 800 km.

The idea of a "long-range shock wheeled-tracked tank" was not forgotten either: a modernized T-26-4 turret with a "three-inch" KT-28 was installed on the BT hull, receiving an artillery BT-7A. Since 1936

by 1938 they were released 154 copies.

Due to the fact that BT tanks had a drive on only one pair of wheels, without tracks they could only be used on paved roads. On a country road, the driving wheels crashed into the ground and skidded.

In the summer of 1934, to the commander of the Kyiv military district, I.E. Yakir was approached with proposals to improve the design of the BT tank by a group of innovators of the 4th tank regiment under the leadership of platoon commander N.F. Tsyganov. He proposed, firstly, to synchronize the work of tracked and wheeled propellers; secondly, to make not one, but three pairs of rollers leading, to supply power to which cardan shafts were continued inside the tank, from which power was already transmitted through bevel gears along vertical shafts directly to the wheels.

Working for four months at 16-18 hours a day, enthusiasts by April 1935 produced drawings and a model of a tank with a new propulsion unit. Since Tsyganov himself did not have an engineering education, young designers V.G. carried out the calculations for him. Matyukhin and L.A. Bessonov. On the personal instructions of Voroshilov, the necessary funds were allocated for the manufacture of the machine, designated by the BT-IS index (Joseph Stalin - naturally), a place at the Kharkov Tank Repair Plant No. 48 and a copy of the BT-2 tank. The construction of the prototype was carried out at an accelerated pace, and in June it was ready for testing. The car, modified at the suggestion of Tsyganov, showed good maneuverability not only on a country road, but even on arable land. Moreover, the tank retained mobility and maneuverability with the loss of one track chain and up to two road wheels from one side. IN

As a result, Voroshilov and Ordzhonikidze signed a joint order to improve the wheeled-caterpillar propulsion and manufacture 10 vehicles of a trial series based on the BT-5 tank.

Despite the shortcomings identified - the weakness of the synchronizer gears, the overload of the rear roller busbars, the stripping of the threads of the vertical plugs and poor access to additional drives - the army commission recommended that the BT-5-IS tank be adopted. Head of the ABTU RKKA G.G. Bokis gave the order: to produce in 1937 at the KhPZ an initial batch of BT-7-IS tanks, and from January 1938, plant No. 48 began to re-equip 300 BT-5 vehicles according to the Tsyganov method.

However, until the end of 1937, only one "IS system" machine was manufactured.

In the SKB-2 of the Kirov Plant (the former Krasny Putilovets), the serial T-28 tank underwent serious modifications. A set of measures was taken to improve the design of the transmission, and the reliability of the chassis was increased. The "high-speed version" of the T-28A brand demonstrated a speed of about 60 km / h in tests.

For the "thirty-fifth", as if for a real ship, they created a tank system of PUS (firing control devices) for centralized target designation and aiming of guns. With this system, continuously improving it and periodically testing it in ideal field conditions, they rushed for six years to come to the sad conclusion: "The PUAT-35 device is experimental and unsuitable for military use ... Among the shortcomings of the device should be attributed

large dimensions, weight and low reliability of operation ... Serial conversion of T-35 tanks for the installation of PUAT does not seem appropriate due to their small number, the high cost of the device itself and its dubious combat value in modern mobile warfare.

By the beginning of 1936, it became clear to almost all tank builders that due to the urgent need to strengthen the armor of combat vehicles, the concept of transferring tanks to wheeled caterpillars did not justify itself. The undercarriage could carry one thing - either powerful armor and reinforced weapons, or an additional wheeled mover. Soviet military leaders were still fascinated by the speed qualities of the Batushki. And in Europe, a new generation of purely tracked tanks appeared.

Qualitatively new machines of all types and weight categories in 1935-1936 were adopted by the French army.

The Renault B-35 double light tank, weighing 9.8 tons, carried a 37-mm short-barreled cannon, one 7.5-mm machine gun and armor up to 45 mm thick with a rational inclination of sheets in a rotating solid-cast turret. The hull consisted of cast parts assembled with bolts on the frame, which made production faster and easier. 82 hp engine allowed to reach speeds of up to 20 km / h, but more infantry escort was not required from the tank. In total, by the end of May 1940, 1880 V-35 / V-40 vehicles were produced (modification with a modified suspension and a more powerful gun). In parallel for actions in the composition

cavalry units, the Hotchkiss company produced about 1000 H-35 / H-39 tanks, similar in design to the new Renaults and largely unified with them, with armor up to 40 mm, having a more powerful engine and with a combat weight of 12 tons developing a speed of 36 km / h.

zvshiy) aaa aka shouting to Him uzanchi - CHUCHUCHUK ie  
“u a

\$5 sy  
their  
\$ # --- \ No

yy +

French light tank Renault B-35

since 2

French light tank "Hotchkiss" H-39 Another version of the tank for the infantry was proposed by ECM. With similar armament, it was faster than the B-35, had a fully welded hull of 40-mm armor plates, and the hull and turret did not have a single vertical part, a 90-horsepower diesel engine and twice the cruising range. One of the best tanks in the world was built by the French company ZOMOOA. The 20-ton vehicle H-35 developed a speed of 40 km / h and had a cruising range of 260 km, which allowed it to operate as part of mobile formations. He became the first tank, the turret and hull of which were cast entirely. The hull armor consisted of three parts, connected by bolted connections, and reached 41 mm, and the forehead of the tower - 58 mm. An 8-cylinder water-cooled engine with an HP 190 power was installed in the engine compartment. Management was carried out using a double differential. The armament consisted of a 47-mm cannon H 5A25 with a barrel length of 34 calibers and an initial projectile velocity of 7760 m / s and one machine gun. The tower had an electric drive. In total, about 500 tanks were made. Through the joint efforts of Renault and ECM, a 32-ton VT breakthrough tank was created. In the rotating turret there was a 47-mm long-barreled cannon coaxial with a machine gun, and in the frontal part of the hull there was a 75-mm Schneider gun with a barrel length of 17 calibers and another machine gun. The howitzer was horizontally directed by turning the car using a differential with a hydrostatic block. The thickness of the armor was 20-40 mm. There were many original technical solutions in the design: sealed fuel tanks, automatic centralized lubrication system, fire bulkheads, gyrocompass. The improved and most massive modification of the B1Y1 H was distinguished by armor reinforced to 60 mm, a new turret, a more powerful engine of 307 hp, a large cruising range of 150 km, and a speed of 28 km/h. Crew - 4 people. The latest copies were equipped with a 300-horsepower aircraft engine. The troops received 365 of these machines.

A common drawback of all French tanks was a cramped turret, in which only one person was placed - the commander, gunner,

loader, and on light vehicles and radio operator - in one person, which inevitably made it difficult to control in battle. A very successful light car was launched into the series by the Czechoslovak firms ČKD and Skoda. In the design of the T-35, many innovations were implemented, which appeared on armored vehicles from other countries only a few years later. So, the drive wheel was placed at the back, thereby increasing the survivability of the chassis. The transmission was controlled by pneumatic servos and a planetary gearbox. Compressed air started the engine, actuated the brakes. The suspension scheme made it possible to evenly distribute the mass of the machine on the rollers, so the average mileage of the tracks was 3-4 times higher than the resource generally accepted for that time. The tank was equipped with a 120 hp 6-cylinder carburetor engine. and developed a maximum speed of 34 km / h. Insufficient power density was partly offset by the presence of a three-speed 12-speed gearbox. Armor plates with a thickness of 8 to 25 mm were fastened with rivets. The frontal armor withstood shelling from the 20-mm Oerlikon cannon from a distance of 250 meters. The armament of the T-35 consisted of a rapid-fire 37 mm semi-automatic cannon with a high muzzle velocity and two 7.92 mm machine guns. There was a commander's cupola with four triplexes and a periscope. The 10-ton machine was technically reliable and easy to manage. The crew consisted of 4 people. Even in England, which was carried away by cruising tanks with bulletproof armor, in September 1936, a prototype of the famous Matilda with 60-mm armor, which could not be penetrated by anti-tank artillery shells, crawled out of the Vickers workshop. Against this background, the Germans looked paler. Due to the fact that the production of main tanks was delayed, in the spring of 1937, an intermediate type of 9-ton reconnaissance vehicle armed with a 20-mm automatic cannon and one 7.92-mm machine gun in a hexagonal rotating turret was launched into the series. Tank Ree. Cream. P had a running gear from the Henschel company of five road wheels of medium diameter on an individual suspension in the form of quarter-elliptical springs, a Maybach carburetor engine with a capacity of 140 hp. With. and developed a speed of 40 km / h. The hull consisted of a frame welded from steel profiles and heterogeneous armor plates welded to it. The thickness of the armor varied depending on which nodes it covered, but never exceeded 15 mm. Crew - 3 people. Until April 1940, 1088 machines of modifications A, B and C were produced, which had minor design differences between themselves, aimed at individual improvements and cheaper production.

more  
..

i-sch. .: - .z i 8: . . G  
%

Fe) VIENNA. E . t 1] ,. A -=298  
OE WAY ALA

- - - and -5

OZ ® ! ®' TO

o a a a t pcs

< E UTU 99 977  
4

ET noe

tyr - By A \u003d, \u003d\u003e o b l o \u003d "

German light tank R2. Krem.P Aiz\$E V To arm the tank divisions,  
the German generals ordered two types of tanks: light, armed with an armor-piercing cannon and two  
machine guns, and medium, weighing no more than 24 tons, with a short-barreled

gun caliber 75 mm. The weight of the cars was dictated by the carrying capacity of the bridges on  
German roads. The speed for both types was determined at 40 km/h. The crew was to consist of five people - the tank  
commander, gunner, loader, driver and radio operator. The commander needed a separate turret with the ability to  
conduct all-round observation. A prerequisite was the presence of a radio station. Thus, a kind of  
revolution took place in European tank building, which S.A. reported to the Soviet military leadership  
back in May 1936. Ginzburg: "At present, the best foreign tanks in all respects, except for  
weapons, overtake domestic models, which are the development of designs developed six to seven years ago ...

At present, the development of domestic tanks is on the path of increasing mass without changing the  
engine and chassis design. This leads to the fact that the chassis and suspension of domestic tanks are  
overloaded and prone to failure during their combat operation...

I believe that we should, without delay, launch experimental work on the creation of tank hulls with a wall  
thickness of at least 40 mm, as well as develop a new type of suspension for small tanks

large mass."

However, it is at this time to make adequate decisions

it turned out there was no one and no time. It wasn't before.

After the trial of Zinoviev and Kamenev and other conspirators from the "United Center",  
played out in August 1936, a full-scale manhunt unfolded throughout the country. The Soviet Union, as Comrade  
Stalin explained, turned out to be chock-full of foreign intelligence spies, saboteurs, enemies of the people who  
had infiltrated all state and party structures,



who put together dozens of counter-revolutionary organizations, preparing a coup, the wholesale murder of their beloved leaders and the "restoration of capitalism." "Pests" were detected everywhere, and among the unfinished "former" - in the first place. Then we went according to the worked out scheme: "As soon as we catch two or three bastards, these two or three bastards will give another two or three bastards."

At the Kharkov plant number 183, they turned out to be "bastards", they were arrested and shot (Article 58, paragraphs 6, 7, 8 and 11 - espionage, undermining the economy, terror, membership in an anti-Soviet organization) who set up the production of high-speed tanks on an unprecedented scale in the world, the director of the plant I.P. Bondarenko, chief engineer F.I. Lyashch, chief metallurgist A.M. Metantsev, finally, the head of the tank design bureau A.O. Firsov is in the afternoon

he built the famous BT-5 and BT-7, and at night, completing the task

Swiss intelligence, broke gears on them, disabling gearboxes. The villains managed to disrupt the release of N.F. machines that received the highest approval. Tsyganov. The desperate inventor signaled to the Central Committee of the Party that the task for the production of BT-IS tanks was ruined due to intrigues: "... the pest Firsov, the former head of the design bureau at the KhPZ plant, where it was transferred by the pest Neiman, the former head of Spetsmashtrest; at plant number 48 (Kharkiv), where those. the director was the fascist pest Simsky, who dragged the fascist Gakkel to plant No. 48 and put him in charge of the production of BT-IS.

It was a glorious time!

By this time, work on a tank diesel engine had reached the finish line at KhPZ. True, the engine continued to smoke and guzzle oil in buckets. The Ukrainian Institute of Aircraft Engine Building, included in the plant as an internal research institute, joined in solving problems. CIAM M.P. diesel engines were sent from Moscow to help the Kharkiv residents. Poddubny and T.P. Chupakhin, Head of the Department of Engines of the Military Academy of Mechanization and Motorization Professor S.A. Stepanov and Doctor of Technical Sciences M.A. Khailova. Direct fine-tuning of the engine for mass production was carried out by designers under the supervision of I.Ya. Trashutin. The latter, by the way, defended his master's thesis on the topic "Optimal design of the main parts of a diesel engine" at the Massachusetts Institute of Technology. At the end of 1937, vigilant authorities established that the diesel department of the plant was the nest of a "Greek national sabotage and rebel organization", and burned out the infection with a red-hot iron. "Deliberately creating defects" K.F. were shot. Chelpan and his staff - M.B. Levitan, 3.B. Gurtova, G.I. Aptekman. I.Ya. received ten years in correctional camps. Trashutin and Yu.A. Stepanov. On December 21, 1937, the ABTU commission on promising work concluded that "at present, the Red Army does not have a single model of a modern tank engine ... The number of developments is large, but in mass production in the period 1933-1937. none accepted." The refinement of the tank diesel engine, which received the V-2 index, dragged on for another two years, and only on September 1, 1939, the engine was put into serial production.

From the Kirov Plant, the chief engineer M.L. Ter-Asaturov, senior engineer M.P. Siegel, head of SKB-2 O.M. Ivanov, director of the plant K.M. Ots. chief

Zh.Ya. became the tank designer of the Kirov Plant in May 1937. Kotin, a young man of 29 years old, who did not shine with engineering talents and did not have leadership experience, replaced the lack of technical qualifications with high demands and rudeness, but had one undoubted "dignity" - he was married to the pupil of the People's Commissar of Defense K.E. Voroshilov. And in his deputies went the adopted son of the "First Marshal" Pyotr Voroshilov. Kotin was a typical representative of the Soviet generation of chief designers, who did not invent anything themselves, did not invent theories, did not write textbooks. They administered, organized, pushed through their projects, gave commitments, reported, in general, led. In later biographies, they will write: "Under his leadership, they were created ..." Nowhere will they indicate what the engineer Kotin invented, what "simple and convenient for calculation" formula he derived, but his colleagues will remember: "Kotin was very well versed in the rapidly changing tastes of higher political spheres, he perfectly guessed what was needed when and by whom.

At plant number 174, an attempt to equip the T-26 tank with a more powerful engine ended in failure in 1937. Work on the creation of the DT-26 diesel engine was discontinued, and the forcing of an existing gasoline engine to a power of 105 hp was stopped. led to a massive failure of machines due to valve breakage when driving under load. Things got to the point that the production of T-26 tanks was stopped for a month.

Suspension from work and arrests of dozens of "pests" followed, including many designers, among them was B.A. Andrykhevich, and skilled workers. As it turned out, they were to blame

subcontractors who supplied the plant with "substandard" materials. However, just in case, the production of the T-26 was resumed in the same configuration. The idea of arming the tank with a 76-mm KT gun (project T-26-4) also failed: the firing of the "three-inch gun" led to the destruction of the tank. A large group of "pests" was identified and arrested at plant No. 37, including the head of the design bureau N.N. Kozyrev and his deputy A.A. Astrov.

The "enemies of the people" turned out to be the "godfather" of almost all Soviet tanks S.A. Ginzburg ("He was the most competent of our tank builders of his time," recalled N.F. Shamshurin), head of the department of tanks and tractors of the Military Academy of Mechanization and Motorization of the Red Army, Professor V.I. Zaslavsky, senior lecturer of the Academy Ya.V. Obukhov. Like the head of this very academy, commander of the Red Banner Zh.F. Zonberg.

Of course, all the conspirators and members of the "Tukhachevsky gang" were the team of the Armored Directorate, arrested in 1937 in full force, primarily the commander of the 2nd rank I.A. Khalepsky, "who was at the head of the" parallel military conspiracy ", and divisional commander G.G. Bokis.

Seemingly erased into the "camp dust" S.P. Shukalov, found and shot N.I. Dyrenkova - a person with no specific occupation, who signed up as a member of a "sabotage-terrorist organization", and even the textbook author of the "world's first tank" A.A. In the end, Porohovshchikov was also figured out, "exposed" and sentenced to "the highest measure of social protection."

In 1937, compared to the previous year, the Soviet tank industry produced 2.5 times less combat vehicles. In general, not a single new tank model was adopted for service during the second five-year plan.

True, the production of armored vehicles was launched at the Izhora and Gorky plants. Experiments on their design began as soon as the automobile industry arose in the USSR.

Since 1933, light armored vehicles of the FAI went into mass production, and since 1936, BA-20s, identical in layout. These were two-axle vehicles with a crew of two, weighing just over two tons, designed for reconnaissance, communications and outposts. The hull was welded from armor plates 6-4 mm thick. In the rear there was a fighting compartment with a rotating turret, in which a 7.62-mm machine gun was mounted. On the highway, the car developed a speed of up to 90 km / h.

The most common versions of the medium armored car were the five-ton BA-6 on a three-axle chassis and with 8 mm armor and the BA-10 that replaced it, which had an armor thickness of 10-15 mm. The car developed a speed of 40-50 km / h, the crew consisted of 4 people. The main highlight of the design was powerful weapons: a turret from a T-26 tank with a 45-mm cannon and a machine gun coaxial with it was installed on armored vehicles; another machine gun was located in the frontal hull sheet to the right of the driver. Cannon BAs were supposed to support the advancing infantry, destroy firing points and armored

enemy equipment, to protect their communications - that is, they were planned to be used on a par with light tanks, to which they were not inferior in armament and protection and at the same time were much cheaper. These BAs were in service with motorized armored brigades, mechanized regiments of cavalry divisions, and were used in tank and mechanized divisions. Before the start of the war, the Red Army received more than 6,000 light and medium armored vehicles, with cannons predominating among them. The Germans also built armored vehicles, and the German ones were better. If only because they were made by Horch and Bussing, and not by the Gorky Automobile Plant.

#### Soviet armored car BA-10

German light armored vehicles 54 Kyo 221/223 All Soviet armored vehicles were created on the chassis of the completely peaceful Ford-A, Ford-AA and Ford-AAA vehicles delivered in 1929 by the Americans. Mastered by the domestic industry, they turned into GAZ, but this did not make them better and more modern. All of them were equipped with the Ford GAZ-A engine with a power of 40 hp. and its forced version GAZ M-1 - 50 hp. In fact, our BAs are commercial cars and trucks with rear-wheel drive, dressed in bulletproof armor. The experience of combat operations showed the impossibility of using cannon BAs at the forefront due to their low cross-country ability. A significant drawback was the weak booking and the lack of a stern control post. It was not for nothing that the Soviet military encyclopedia, back in 1932, drew attention to the need to create a "special chassis" and the impossibility of "fully basing

production of armored vehicles in the peaceful automotive industry. The only advantage of the Soviet cannon armored vehicles was their unparalleled armament. All Wehrmacht armored vehicles were specially built vehicles. Since 1935, light two-axle models 221, 222 and 223, weighing 4.8 tons, began to enter service with reconnaissance battalions. All four wheels were driven and steered. Engine "Horch" with a power of 75 hp allowed to develop a speed of 85 km / h. The protection of the crew, consisting of three people, was provided by 8 mm armor. In faceted revolving

the tower was equipped with either one machine gun, or an anti-tank rifle, or a 20-mm automatic cannon.

The heavy three-axle "special vehicle" 231/232 was intended for reconnaissance and support for the actions of motorized infantry. It was equipped with two control posts, a Bussing engine with a capacity of 150 "horses" (the most powerful automobile engine produced in the USSR had 73 hp), a 20-mm cannon and a machine gun.

In addition, German firms produced four-axle armored vehicles weighing 8.4 tons. All eight wheels were driven and steered, which ensured high cross-country ability, and two steering columns made it possible to move in a six-speed mode (up to 80 km / h) both forward and backward. The armament consisted of a 20-mm cannon and one machine gun, the crew - 4 people.

Until the middle of 1941, approximately 1700 armored vehicles of various types were built in Germany, heavy ones accounted for about a quarter of the total.

German heavy armored car 5A KE 232 In 1937, the first results of the Spanish Civil War were summarized, where Soviet, Italian and German armored vehicles clashed in open battle. Hitler sent the Condor Volunteer Legion, which included the 88th tank battalion, equipped with 41 RU 1 vehicles, to help General Francisco Franco, who had raised an anti-communist rebellion. The Italians sent their Ansaldo wedges to the Falangists. "Fascist maptins" in all respects turned out to be weaker than the T-26 and BT-5 delivered to the Spanish Republic by Comrade Stalin in the amount of 3477 pieces. "Light German tanks," reported "General Pablo," who is also the chief adviser on tank affairs, commander D.G. Pavlov, - in the fight against the republican cannon tanks they were not included in any comparison and were shot mercilessly. Still, our "forty-five" confidently broke through 15-mm German armor from an aiming distance of 1200 meters; the strengthening of the frontal part of the R7 P did not save the situation by applying additional 15-mm and 20-mm armor plates. While

how the shell of the German 20-mm KmK-30 gun retained the necessary armor penetration at a distance of 300-500 meters. J. Fuller generally called Italian cars "efficiently moving coffins." In addition, a high-explosive fragmentation projectile was developed for the Soviet 45-mm cannon to defeat the enemy's manpower, and from a German fart (according to German classification it was considered a machine gun), a person could only be killed by a direct hit. It got to the point where

The Francoists announced a cash prize for each captured Soviet tank and, after a year of hostilities, completed four tank companies with captured T-26s, BT-5s and BA-6 armored vehicles. Domestic tank crews and tank builders were taken by surprise by another surprise - the massive use of mobile, inconspicuous and rapid-fire anti-tank artillery on the battlefield - 37-mm "Rheinmetalls" and "Bofors", 20-mm "Soloturnov" and anti-tank guns. At the same time, the Germans first used the legendary 88-mm

anti-aircraft guns.

The materials of the meeting of the NKT ABTU, held in January 1937, indicated:

"A significant increase in anti-tank rapid-fire guns of 17-44 mm caliber can lead to the fact that the blow of a mechanized brigade can be repelled with heavy losses for the latter ... It is necessary to carry out hasty work to create tanks for breaking through heavy armor, as well as artillery tanks armed with large guns power to deal with firing points and accumulations of combat forces.

There was a lag behind the Western powers, who were building a new generation of machines. None of the promising tanks could be considered modern, since they did not provide protection against small-caliber shells, although both Leningrad and Kharkov tried this problem

decide.

",

A

NKT K

L A.

AAA, Oh Aa Dee, don't

Tank BT-SV-2 "Turtle"

The first Soviet tank with anti-cannon armor, or the "small tank of heavy armor" T-46-5 (object 111), developing the "twenty-sixth" line, was created at plant No. 185 under the leadership of S.A. Ginzburg and M.P. Siegel. The result was a 32-ton vehicle, armed with a 45-mm cannon and two machine guns, which developed a speed of only 30 km / h, but had frontal and side armor 60 mm thick. A prototype was made, but the tank did not go into series, in the first place

because the weapons were considered insufficiently powerful, and almost all of its developers and customers turned out to be "enemies of the people." In Kharkov, at the plant number 48, the design bureau of N.F. Tsyganova, in addition to the BT-IS model, developed a tank with improved armor protection BT-SV-2 "Turtle". Its main fundamental difference was the design of the armored hull, the sheets of which were located at large angles of inclination. The case had absolutely no protruding parts and vertical surfaces. In general, the booking scheme was copied from the French ECM-36. The undercarriage was covered by an inclined

bulwark, which made it difficult for the crew to repair the tracks. The prototype was made using conventional steel sheets with a thickness of 15 mm, assuming in the future to replace them with 25 mm or even 40 mm armor. In the course of tests carried out at the end of 1937, the applied booking principle was found to be quite acceptable. At the same time, it was noted that in the presence of real armor, the mass of the tank would increase to 25 tons, which the undercarriage of the wheeled-tracked BT "won't pull". Work on the "Turtle" was curtailed at the beginning of 1938 in connection with the arrest of N.F. Tsyganov, he turned out to be a "fascist", like other members of his design bureau. Design Bureau of the Kharkov Plant No. 183 after A.O. Firsov was headed by M.I. Koshkin, who previously worked in Leningrad on heavy tanks. Koshkin's design talent erupted rather suddenly and somewhat late. The general education of Mikhail Ilyich consisted of two classes of a parochial school, "except for self-education." At the age of eleven, he went to work in a factory. In 1917 he was drafted into the army, but did not have time to fight for faith, the tsar and the Fatherland. He went through the Civil War as a commissar, in 1921-1924 he studied at the Communist University named after Ya.M. Sverdlov, after which he was in the Soviet and party work in Vyatka: he was the director of a confectionery factory, the secretary of the district committee. In 1929, the party sent him to study at the Leningrad Polytechnic Institute, from which Koshkin graduated in 1934 at the age of 36. Only after that he took up the design of tanks at the Kirov plant, in a short time reaching the position of deputy head of the design bureau. Under the leadership of Ginzburg and Siegel, the "young specialist" Koshkin participated in the development of the T-46-5 tank, and if the first two defendants were arrested and imprisoned following the results of the work, then Mikhail Ilyich received an order "for early completion of the task of modernizing one of the combat vehicles." In Kharkov, the new head of the tank design bureau was greeted with caution.

In August 1937, the KhPZ received a technical assignment for the design of a BT-20 tank weighing up to 15 tons, with sloping armor 20-25 mm thick, a 45-mm or 76-mm cannon, three machine guns, a flamethrower "for self-defense", a diesel engine and a chassis part of the BT-IS type (I don't know what hit the military comrades there, but they also demanded from the Astrovo bureau a new T-39 amphibious wheeled-tracked tank with a 200-horsepower diesel engine and a flamethrower "for rear protection"). The tank was supposed to go into production on May 1, 1939.

To solve this problem, "due to the extreme seriousness of this work and the extremely tight deadlines," in October 1937, a separate design bureau was created at the plant (subordinate directly to the chief engineer of the plant, bypassing Koshkin). It included local designers A.A. Morozov, N.A. Kucherenko, A.A. Moloshtanov, M.I. Tarshinov, V.M.

Doroshenko, M.M. Lurie, P.P. Vasiliev, Ya.I. Baran, as well as a large group of graduates of the Military Academy of Mechanization and Motorization. Military engineer 3rd rank A.Ya. Dick. The preliminary design of the BT-20 was approved on March 25, 1938, two months behind the deadlines specified by the government. The culprits were calculated with lightning speed: A.Ya. Dick and his "accomplices" were arrested, the OKB was disbanded. Further work was headed by M.I. Koshkin. Then K.E. Voroshilov suggested creating a purely caterpillar version of the tank - this is about the myth that the T-34 was supposedly an "initiative" project of the brilliant Koshkin. Other military men joined the opinion of the marshal, in particular, the new head of the ABTU commander D.G. Pavlov, who advised to strengthen the armor of the frontal part to 30 mm and provide for the installation

76 mm guns.

In August 1938, the BT-20 / A-20 project was considered at a meeting of the Main Military Council. Shortly thereafter, the decision was approved to manufacture the machine in two versions. By January, KB-24 completed the working drawings of the A-20 tank and began designing the A-32 tracked vehicle. In February 1939, at a meeting of the Defense Committee, Stalin gave the final go-ahead to build both tanks and test them in parallel.

Leningraders were supposed to present a new heavy tank. One project was developed by the design bureau of the experimental engineering plant No. 185 under the leadership of M.V. Barykov, released from the zindan S.A. Ginzburg and

E.Sh. Paley; the other is SKB-2 of the Kirov Plant under the direction of Zh.Ya. Kotin, the lead designer was N.V. Zeitz (he will soon be imprisoned and replaced by A.E. Ermolaev). In August 1938, the Central Committee of the All-Union Communist Party of Bolsheviks set

The Defense Committee has a specific task: to create samples of tanks with

anti-shell armor by June 1939. At the plant number 37 N.A. Astrov worked on a new amphibious tank (Nikolai Alexandrovich was also first removed from work, re-arrested, but then released and put back in his original place).

Although all design bureaus worked in a frenzied race mode, the new generation of Soviet combat vehicles went into production only in 1940. Until that time, run-in old designs were produced in increasing numbers, trying to squeeze the maximum possible out of them.

Back in the spring of 1938, the testers came to the conclusion: "The T-26 is a tank of an outdated design. It is urgent to develop a worthy replacement for this machine. But there was no worthy replacement. Starting in 1938, the T-26 began to install a stabilizer for the gun aiming line in a vertical plane. As a means of radio communication, a 71-TK-1 radio station was used with a whip antenna instead of a handrail. From February 1939, the tank received a turret box with inclined armor plates, the rear turret machine gun was removed, the gun ammunition was increased to 165 shells, the suspension was strengthened by introducing five-leaf springs instead of three-leaf ones, and the combat light headlights were abolished. Since 1940, the turret box began to be made of 20-mm homogeneous steel instead of case-hardened. Finally, during the Soviet-Finnish war, about a hundred tanks were equipped with armored screens, bringing the thickness of the frontal armor to 60 mm. Overloading had to be paid with a decrease in maneuverability, patency and overall reliability

designs. From 1938 to 1941 another 4156 vehicles were built, each

the tenth - in the flamethrower version. The T-26 tank became the most massive pre-war tank of the Red Army, with a total of 11,218 units produced by the industry.

The Kharkov plant at the end of 1939 began to produce the final version of the "high-speed fighter". The main and cardinal difference between the BT-7M was the installation of the long-awaited V-2 tank diesel engine, which made it possible to reduce the transportable fuel supply and abandon additional tanks, almost

doubling while increasing the power reserve. They were built for only six months, but they managed to produce more than 700 cars. The BT-7M was the last wheeled-tracked tank in Soviet history, and it was only structurally such. In reality, he could not move on wheels, since the rubber tires of the road wheels could not withstand the significantly increased loads and shattered to pieces.

In total, the "locomotive builders" produced 8060 tanks of the BT line, including (even if the "two" and "five" are considered limitedly fit for combat) 5587 tanks of the BT-7, BT-7A and BT-7M types - outstanding machines of their time.

Since 1938, the T-28 began to install a 76-mm L-10 gun designed by I.A. Makhanov with a barrel length of 26 calibers and an initial projectile speed of 555 m / s, which had significantly more power than the KT-28 (from a distance of 1000 meters, the L-10 normally pierced 50 mm of armor); a machine gun appeared in the aft niche and an anti-aircraft turret. Having swallowed the Finnish experience, the tanks began to be equipped with armored screens. The thickness of the frontal armor of the hull and turret was increased to 50-80 mm, side - up to 40 mm, weight increased to 32 tons. Finally, a batch with a conical main tower was released towards the end. Until 1940, 523 T-28 tanks were produced.

The last six T-35s, produced in 1939, also received conical turrets and reinforced armor, bringing the vehicle's weight to 55 tons. In five years, 61 five-tower monsters came off the stocks.

In the same year, the last series of 158 T-38 floaters was built.

In the Third Reich, the tank theorists of the "blitzkrieg" finally received from industry the entire range of full-fledged combat vehicles they had conceived - from the P7. W to R77. PU. In October 1938, after the release of small experimental batches, the Rea breakthrough tank went into mass production. Kroeoh. W Ah \$ E. E, E, created by Daimler-Benz. It had a combat weight of 19.5 tons. The chassis consisted of six double rubber-coated road wheels mounted on torsion bars, the first and last pair of rollers additionally had hydraulic shock absorbers. Cruising on the highway - 165 km. Armament included a 37mm semi-automatic cannon and three MC 34 machine guns.

In 1939, large-scale production of the P7 support tank began. Kryo \. TU Ah\$E. In which had almost the same layout and design and weight up to 19 tons. A 75-mm gun with a length of 24 calibers and a machine gun coaxial with it were installed in the tower. Another machine gun in a ball mount was in the front hull sheet on the right. Power reserve - 200 km.

Both cars had welded bodies, the same 12-cylinder liquid-cooled Maybach NG120TV carburetor engine

with a power of 300 hp, developed a speed of 40 km / h, carried 30-mm chromium-nickel heterogeneous armor, a crew of five, an observation turret for a commander freed from unnecessary worries. On tanks, many innovations have found application: torsion bar suspension of road wheels, control using servo drives and planetary turning mechanisms. Especially good were the transmission with



six-speed gearbox, communication and surveillance equipment. The cars turned out to be reliable, easy to control and comfortable for the crew. It's all about the fundamental requirement of the customer: "Tanks must provide good surveillance and be easy to manage."

German tank R2. Krei. [U AizEE S All German tanks were equipped with EU 5 VHF stations designed for communication within the unit, and commander tanks were equipped with a set of radio equipment that allowed communication between battalions, with the division headquarters, and interact with aviation. After the occupation of the Czech Republic, the Germans liked the successful car [T-38 designed by A. Surin, which weighed a little less than 10 tons and developed a speed of 42 km / h. It was equipped with a 125 hp 6-cylinder carburetor engine, a planetary gearbox and

two-stage planetary rotation mechanism. Large-diameter road wheels were interlocked two by two on horizontal leaf springs with mechanical shock absorbers. The hull was completely riveted, armor varied from 10 to 25 mm. Armament consisted of a 37 mm cannon and two machine guns. On some vehicles, the frontal armor was increased to 50 mm. The tower had a commander's cupola with triplexes. Thanks to a well-thought-out layout, four people were freely placed inside the tank. In the tank units of the Wehrmacht, Czech vehicles under the designation P7. Cream. 38(t) began arriving in 1939. Just as willingly, the Germans put the "privatized" G.T-35s under arms. On September 1, 1939, Hitler attacked Poland and thereby got involved in the Second World War, with 3195 tanks, including 1663 R7. [and 1223 R7. P. "Heavy" P7. 1\ there were only 211 pieces, "medium" P7. 2, after a year of mass production - 98. In fact, the Wehrmacht defeated the Polish army on training vehicles.

The Fuhrer's accomplice in the division of the Commonwealth, Comrade Stalin, to protect against surprises and accidents "the lives and property of the fraternal Belarusian and Ukrainian peoples", which he immediately begins to shoot and dispossess, moved over 6000 tanks - less than a third of what the Kremlin had .

After the French campaign, Hitler demanded that the "troika" be re-equipped with a long-barreled 50 mm 1/60 cannon. However, the arms control, in order to speed up the process, chose a gun with a barrel length of 42 calibers and, accordingly, a lower muzzle velocity. It was installed in P7 tanks. CROE5. Fri Ah\$E. E, E, C. On the modification H, which appeared in 1940, due to the screens, the thickness of the armor of the frontal and aft parts of the hull was increased to 60 mm. Combat weight increased to 21.8 tons. Tank R7. [U also received additional armor protection: the thickness of the sheets of the frontal part of the hull was increased to 50, on the sides - up to 30, on the turret - up to 50 mm. The combat weight of modifications E and E, produced in 1940-1941, increased to 22 tons.

For the future, the design bureaus of the Henschel and Porsche firms worked out the project of the Criminal Code - the future Tiger.

Eiya

AE] - ee = TE E [K

OTOS! E 5

German assault gun 5shS Sh

HS

<  
with

4.7 cm anti-tank launcher based on the PE tank. Kreu". [

== ==="

ab  
aa

9..9.  
m

A

A ^  
m".

Technical assistance vehicle based on the RG tank. Crewe. [

At the beginning of 1940, the Wehrmacht began to receive self-propelled guns, created on the basis of the undercarriage of the R7.Krÿm tank. Fri. The essence of the idea put forward, allegedly by General Manstein, was simple: to give the advancing infantry mobile armored artillery, not inferior to tanks in cross-country ability, operating directly in battle formations, which would suppress enemy firing points from close range. The absence of a rotating turret in such machines made it possible to simplify and significantly reduce the cost of the design, as well as to install more powerful guns in the conning tower. The 5#a1.S Sh assault gun had a combat weight of 20.2 tons, a frontal armor thickness of 50 mm, and a side armor of 30 mm. Armament consisted of a 75-mm short-barreled gun. All four crew members were located in the wheelhouse. "Artsturm" was in service with battalions of assault guns of motorized divisions and companies of assault guns of infantry divisions. Since the spring of 1940, tank divisions were given separate companies of 150-mm self-propelled howitzers, and motorized corps - battalions of 47-mm anti-tank self-propelled guns (both of which were created on the basis of the "unity") - a total of 240 vehicles were built. To cover mobile

formations from air attacks during the march they were given anti-aircraft

self-propelled units armed with 20-mm automatic guns.

In general, the Germans, on the basis of each chassis, created a whole range of very "useful in the economy" specialized machines. In addition to various types of self-propelled artillery, these are ammunition transporters, bridge layers, repair and recovery and sapper vehicles.

Meanwhile, in the Soviet country, only tanks were massively riveted from caterpillar armored vehicles. Thousands. No, attempts to construct something else were made continuously. But the result was still tanks.

Back in the 1920s, several options were worked out to give mobility to artillery systems - from a battalion self-propelled howitzer "on a leash" designed by N.V. Karataev, who moved at a walking pace, before using automobile and tractor chassis. At the Krasny Arsenal plant, a special "self-propelled design bureau" was even created, however, it did not create anything suitable for combat use. With the development of domestic tank building, work in the field of self-propelled artillery acquired a truly Soviet scope.

As soon as the first serial MS-1 tank was put into service, they began to design a 76-mm cannon mount, a self-propelled gun with a twin 37-mm anti-aircraft gun and an SPAAG armed with a quad machine gun mount on its basis. But the MS-1 became obsolete almost instantly, so the designers were reoriented to use the chassis of the T-19 attack tank. However, they did not accept it either, launching Anglo-American samples into mass production. In October 1930, the Revolutionary Military Council adopted the "Resolution on the experimental system of armored weapons in terms of self-propelled artillery self-propelled guns", according to which for motorized units it was required to develop about twenty types of self-propelled guns, including a 122-mm howitzer on a medium tank chassis, a 76-mm escort cannon, 45-mm anti-tank gun and 37-mm anti-aircraft gun - based on the T-26 and 76-mm dynamo gun based on the T-27. Since it was necessary to fight with the whole world, then, according to M.N. Tukhachevsky, after 40 thousand tanks in the second and third echelons, all the products of tractor-building plants - Dyrenkov's "surrogate" tanks - were to move against the enemy. To escort them and support the infantry, a "second-echelon self-propelled gun" was ordered - a 76-mm cannon based on a tractor. In addition, in 1931, Spetsmashtrest was given the task of developing means of mechanizing artillery of high and special power.

"The transience of modern combat," the Soviet Military Encyclopedia pointed out, "requires a quick response of artillery to the requirements of other branches of the armed forces, which should be reflected in the organization of modern artillery in the form of an increase in the proportion of escort artillery, especially self-propelled, In strengthening anti-aircraft motorized artillery ..."

Work on the creation of self-propelled artillery mounts was concentrated mainly in OKMO of the Voroshilov plant and at the Bolshevik plant. The first attempt to install a 76-mm gun on the T-26, embodied in metal, was the closed-type SU-1, developed in 1932 under the leadership of P.N. Syachintov and L.S. Troyanov. But with

there were no shock plans for the production of tanks for self-propelled guns.

Almost simultaneously, the Bolshevik plant, together with military warehouse No. 60 (the core occupation of the workers of this "warehouse" was the construction of armored trains), presented two variants of the "second echelon" self-propelled gun - the Kommunar tractor (in the German homeland - "Ganomag"), armed with a three-inch field arr. 1902 (SU-2) and 76-mm anti-aircraft gun mod. 1915 (SU-5). The UMM Commission recognized them as quite combat-ready. The construction of an experimental series of twelve units was started, but it was soon discontinued.

The four-year saga of turning the T-27 into a "small artillery self-propelled gun" ended in failure. At first, they tried to install a 37-mm Hotchkiss cannon on the tankette, but then the ammunition load did not fit in it; a special trailer was intended for its transportation. In 1933, the SU-3 was created, armed with a 76-mm dynamo-reactive cannon, but it could not overcome military tests. Two years later, the KT-27 artillery system appeared. It consisted of two converted tankettes: the first one housed the driver and the 76-mm regimental cannon, the second one - gun servants and ammunition. The military did not like this decision.

One of the points of the tank building program for the second five-year plan was the adoption of a self-propelled artillery mount "on the units of a combined arms tank." In 1934, the design bureau of plant No. 185 developed a single "small triplex" SU-5, which included a universal carriage with folding stops, made on the basis of the T-26, and interchangeable guns mounted on it: 76-mm divisional gun (SU-5-1), 122mm howitzer (SU-5-2) and 152mm mortar (SU-5-3). Due to the limited ammunition carried, the complex was supplemented by an armored cartridge carrier on the same chassis. Field tests gave positive results, but only 34 vehicles were manufactured (one with a mortar). In 1935, the plant introduced the AT-1, an "artillery tank" armed with a 76 mm PS-3 cannon and two machine guns. It was intended to escort long-range infantry support tanks and long-range tank groups and, ideologically and even externally, was an analogue of the German Artshturm, albeit with bulletproof armor. The car had a conning tower with an upper belt in the form of folding shields, which improved the visibility of the battlefield and the working conditions of the crew. AT-1 produced 10 pieces and abandoned them in favor of the BT-7A tank.

PS

Yes

A

ko and chm dick her,

AA PARI ve high school o wat? TETE Wa

Artillery tank AT-1 Self-propelled

guns for a 76-mm anti-aircraft gun on an extended T-26 (SU-6) chassis and a 45-mm anti-aircraft gun based on the T-28 (SU-8) were designed as air defense systems for mechanized and cavalry formations. Things did not go further than prototypes. It happened exactly the same

the fate of the SU-37 and SU-45 anti-tank projects based on the T-37 and T-38 reconnaissance tanks. Finally, in the summer of 1934, as part of the creation of RKG self-propelled artillery under the Big Duplex program, a 48-ton experimental self-propelled gun was created based on the T-28 and T-35 units, which received the SU-14 index. The body of the vehicle was made of riveted armor 10-20 mm thick, the armament consisted of a 203-mm howitzer or 152-mm cannon mounted on an open platform, and three machine guns carried in the fighting compartment. The M-17 engine allowed the car to accelerate to 27 km / h. Crew - 7 people. Alteration, fine-tuning, testing dragged on for two and a half years. The plan for 1937 provided for the production of an initial batch of five SU-14-2 vehicles with a 152-mm Br-2 gun in an armored wheelhouse. For the successes and achievements of P.N. Syachintov was awarded the Order of Lenin, after a few

months for sabotage and espionage - arrested and shot. All work on the preparation of mass production of the SU-14 was stopped. The two available samples were handed over to the warehouse. At this, work on the creation of self-propelled artillery in the USSR ceased. The only result of ten years of vigorous activity in the field of artillery motorization was the accumulated experience, a small batch of SU-5 vehicles, a hundred 76-mm SU-1-12 regiments mounted on automobile chassis, and a tracked carriage developed by I. Magdasiev for the 203-mm howitzer B- 4, which allowed her to move independently at a speed of about 10 km / h. By the way, Magdasiev also had to be shot. Like the editor-in-chief and co-editors of the Soviet Military Encyclopedia and its entire wrecking editorial board, with the exception of the chairman - K.E. Voroshilov. A new generation of military leaders decided that self-propelled artillery installations were not really needed. In their understanding, the self-propelled guns were just a bad tank.

It was in 1937 that a prototype self-propelled gun "Artsturm" rolled out of the workshops of the Daimler-Benz company, which became the most massive armored vehicle of the Wehrmacht, and after it was armed in 1942 with a long-barreled gun - and the main anti-tank weapon. They were released more than 10,500 units in both assault and anti-tank versions.

Literally a month after the German attack, the Soviet leadership was forced to take feverish actions in order to compensate for the huge losses in tanks and to launch the production of simple, cheap armored vehicles with good cross-country ability and cannon armament. So, on July 20, 1941, the Kharkov and Stalingrad plants were instructed to urgently develop and during August - September produce 750 tractors with 25 mm armor, armed with a 45 mm gun. Another improvisation was the installation of a rotating part of a 57-mm anti-tank gun on the Komsomolets tractor. When the Germans reached Moscow, they also remembered the SU-14. Both vehicles were used for firing from closed positions as part of the "Separate Heavy Special Purpose Division".

It was only in February 1943 that the serial self-propelled guns SU-76 (ZIS-3 anti-tank gun based on the T-60 light tank) and SU-122 (with the M-30 howitzer based on the T-34) began to arrive at the front, from which they immediately formed the first self-propelled artillery regiments - the 1433rd and 1434th. Self-propelled guns were crude, unreliable, with many design flaws (no wonder - from the GKO decree, which ordered them to start designing, to being put into service

48 days have passed!), but already after the first battles, the chief of artillery of the Red Army reported to the State Defense Committee: "... self-propelled guns are needed, since no other type of artillery has given such an effect, accompanied by attacks by infantry and tanks and interaction with them in the close battle. The material damage inflicted on the enemy by self-propelled guns and the results of the battle make up for the losses."

But all this will be six years after the defeat of the design bureau of plant No. 185 in 1937. Hands also did not reach the "armored personnel carriers for infantry". (In addition, the idea belonged to Tukhachevsky, back in March 1931, who proposed the creation of a wheeled armored personnel carrier, or, as he called it, "a tank

infantry landing, which was supposed to be carried by a commander with 22 soldiers covered with armor "against a heavy machine gun.") In April 1941, the Soviet military delegation visited the Third Reich for the last time. Hitler, who had already signed the Barbarossa plan, ordered to show the "comrades" everything, including the tank factories. The Russians were not at all impressed with the Aryan "Panzervagens". Shaking their heads in disbelief, they felt the equipment they had demonstrated and left, confident that the Germans had hidden the best examples. As Guderian recalls, "... the Russians, examining our T-[U] tank, did not want to believe that this was our heaviest tank. They have repeatedly stated that we are hiding from them our latest designs, which Hitler promised to show them. "Aha! - concluded the most ingenious. "It seems that the Russians themselves already have heavier and more advanced types of tanks than we do." But Hitler did not draw any conclusions. Like Stalin, he simply did not believe in what he did not want to believe.

The Germans not only showed their technique, but also sold samples of it. Our merchants willingly bought everything related to aviation, artillery and navy, but from armored vehicles they purchased only Ree. Cream. SH ACHZEE. E. At the GABTU training ground in Kubinka, it was subjected to comprehensive tests, they highly appreciated the quality of armor, transmission, mobility, excellent visibility and comfort, but noted with satisfaction that in terms of armor and armament, the Troika is inferior to the latest Soviet

machines.

This gave Stalin a reason to declare at a meeting with graduates of military academies on May 5, 1941: "From the point of view of the military, there is nothing special in the German army - in tanks, and in artillery, and in aviation."

Iosif Vissarionovich himself had something special. By this time, the tank industry had almost 100% switched to the production of the latest types of vehicles - the T-40, T-34 and KV.

To replace the T-37A and T-38 tanks in the troops, the team of N.A. Astrov at plant number 37 created a 5.5-ton floating vehicle with bulletproof armor, armed with a twin mount of DShK and DT machine guns. A little later, a 20-mm ShVAK aircraft gun was installed in the tower. In the chassis, an individual torsion bar suspension of road wheels equipped with rubber tires was used. The tank was equipped with a GAZ-11 engine (aka Dodge-Ts5) with a power of 70 hp. On land, the T-40 developed a speed of 45 km / h, on the water - 6 km / h. The increased internal volume made it possible to place the 71-TK-3 radio station on command tanks. During the tests, the tank made a 3000-kilometer run along the route Moscow - Minsk - Kyiv - Moscow

overcoming all encountered water barriers. At the Kirov Experimental Machine Building Plant, a team of designers led by S.A. Ginzburg designed a very promising light escort tank designed to replace the T-26. Its undercarriage consisted of six road wheels with torsion bar suspension, a steering wheel, a stern drive wheel and three support rollers. The hull of the tank, which received the T-50 index, was welded from cemented armor plates 25-37 mm thick, which had angles of inclination of 40-57 degrees, which reliably protected 37-mm guns from fire. A 45-mm 20K cannon and two machine guns coaxial with it were installed in the turret. Six-cylinder diesel V-4 with a capacity of 300 hp. allowed 14-ton

combat vehicle to move at a maximum speed of 52 km / h. The crew consisted of four people, and three were in the tower. For the first time after the MS-1, a commander's cupola appeared on a Soviet tank. In terms of firepower and armor protection, the T-50 surpassed all light and most medium tanks of other countries. Its production in the spring of 1941 was entrusted to plant No. 174 named after Voroshilov.

The T-50 was planned to be the main tank of the Red Army. In battles, he showed excellent qualities. In a letter to the plant staff, the head of ABTU wrote: "Your new tank is extremely needed at the front. It is trouble-free, unobtrusive, perfectly booked, has excellent cross-country ability and mobility. The command of the Red Army asks you to make every effort to speed up the production of front tanks in every possible way. However, in the second half of 1941, only 50 units were produced: it was not possible to launch mass production of the machine in wartime conditions, primarily due to the cessation of production of the V-4 diesel engine.

By the summer of 1939, prototypes of heavy vehicles were made in Leningrad, designed to qualitatively strengthen combined arms formations when breaking through especially strong and fortified defensive lines in advance. The Kirov Plant presented the SMK tank ("Sergey Mironovich Kirov"), the Kirov Plant - the T-100. Although they were made by different teams, but - under one order. As a result, the layout turned out to be twin tanks. Initially, they were supposed to have three turrets with cannon and machine gun armament, however, at one of the meetings of the Defense Committee, Comrade Stalin removed the aft turret from the QMS model and offered to leave it that way. Indulging the tastes of the leader, they removed the "extra" tower on the T-100. The saved weight was used to thicken the armor.

Light amphibious tank 1-40

[OI v. About t,  
© :© From:  
E? # y

YUO 1 about

Light tank 1-50 The

undercarriage of the T-100 tank, which weighed 58 tons, consisted of eight gable road wheels, four support rollers, rear drive wheels with toothed rims and cast guide wheels with screw-type tensioners. The machine had an individual balance-spring suspension and leaf

springs without shock absorbers. The hull was assembled from rolled sheets and cast parts joined by welding, rivets and bolts. The tank had armor 50-60 mm thick, which provided protection against anti-tank artillery fire of up to 47 mm caliber at a firing range of less than 500 meters. Two cast gun turrets of a conical shape were located one after the other along the longitudinal axis of the hull. A 76-mm cannon with a machine gun was installed in the rear turret, and a 45-mm cannon and a machine gun were installed in the front turret. The third machine gun was mounted in a ball mount in the aft part of the upper turret. Carburetor "gliding" engine GAM-34-BT (designed for torpedo boats and sea hunters) with a power of 850 hp. allowed to reach speeds up to 36 km / h. The crew consisted of 8 people. The SMK tank weighed 55 tons, had a torsion bar suspension, the same engine, similar parameters, one machine gun more, with a crew of 7 people. In parallel with the QMS, the group of N.L. Dukhova developed a project for a heavy tank KV - "Kliment Voroshilov". Or, as the design bureau cautiously joked, "Kotin to Voroshilov." In fact, the KV was a "shortened" SMK for two track rollers with one tower and a V-2K diesel engine with an HP 600 power. On the recommendation of the ABTU, they were going to install a Skoda-type planetary gearbox on the tank (the fact is that the Czechs brought the GT-35 tank to Moscow, which the Soviet government was supposedly going to buy; they meticulously copied the most interesting components of a foreigner locked in a hangar under "reliable guard" - suspension, gearbox, turning mechanisms, surveillance devices), but then they decided that an ordinary domestic one, borrowed free of charge from the Americans at one time, would do. It weighed 47.5 tons, the thickness of the frontal and side armor was 75 mm (the armor of the cast turret was 95 mm); crew - 5 people. The armament consisted of four machine guns and a 76-mm L-11 cannon with a barrel length of 30 calibers. Her

b.5-kg armor-piercing projectile with an initial speed of 612 m / s pierced vertical armor 52 mm thick from a distance of 1000 meters, and 60 mm - from 500 meters. While the "skin" of KV and SMK was not taken by any of the existing anti-tank guns, even from a pistol distance. French and Czechoslovak 47-graph papers from the same distance - 40 mm. Even the latest anti-tank gun Rak. 38 caliber 50 mm, according to General E. Routh, had a chance to penetrate the KV armor only "under the most favorable conditions at close range ... The hole was obtained with a diameter of a pencil! T".

A ZOO

".

} - : A - \_  
zhzh  
eeiYIN sk m  
\u003d t Be m 8. KZh  
yy - & MORE TRUE ty 3 K. you -5 i  
IAA E \ A Ya ota 79 y o OS  
b. [2



A yb-Y

I

> op AR + ri its AA.

5 ý5 \$ e`Fog^ 1 +. UH 99+. % I

I CHU OU MEI. OJ koi ie: i : y : RD

y. .,

Heavy tank SMK All new

machines at the end of September demonstrated the state commission, whose members were Voznesensky, Zhdanov, Mikoyan, Pavlov. The authorities were especially pleased with the tanks of the Kirov Plant, one look of which clearly expressed the power of the proletarian state. The single-tower KV at the show cheerfully demolished trees, pushed apart the gouges, shot targets, showed quite satisfactory maneuverability. The first copy had two guns in the turret - 76 mm and 45 mm. Soon, a conflict with the "Finnish booger" began, which threatened the security of Leningrad with its

"long-range weapons". "We cannot move Leningrad, Stalin sighed. "We'll have to move the border." Since the ruling

the clique of Finland refused to give up the Karelian Isthmus in a good way, and most importantly, rejected the treaty of friendship and mutual assistance proposed by the Kremlin, which provided for the peaceful introduction of Soviet troops into the country, on November 30, the red regiments, supported by 1569 tanks and 251 armored vehicles, rushed to the aid of the oppressed Finnish proletariat. And they choked on their own blood, trying to overcome the "fortified defensive zone in advance", saturated with engineering barriers, firing points and anti-tank "bofors", which easily pierced the light T-26 stuck on the gouges.

As a result, S.V. Borzunov for "field tests" experimental vehicles T-100, SMK and KV were transferred (on it the 45-mm gun was replaced with a machine gun) with factory volunteers

in the crews. On December 17, a separate company of heavy tanks under the command of Captain I.I. Kolotushkina took part in an attempt to break through the Khottinensky fortified area of the Mannerheim Line. For combat

the baptism was observed by the commander of the North-Western Front, commander of the 1st rank S.K. Timoshenko, member of the Military Council of the Front A.A.

Zhdanov, commander of the 7th Army A.M. Meretskov, head of the GABTU

commander D.G. Pavlov, director of the Kirov plant I.M. Saltzman, chief

designer Zh.Ya. Kotin and half of his KB. The attack ended in failure.

Tanks uselessly flattened the snow-covered field in front of the Finnish positions for almost two hours, not seeing the targets, shot into the white light, but steadfastly withstood a dozen hits from the enemy's 37-mm cannons. IN

Moscow immediately flew enthusiastic report. A day later, on December 19, 1939, a decision was issued by the Defense Committee on the adoption

into service with the KV heavy tank and the V-2 high-speed diesel engine. The SMK tank was also recommended for production, however, during the next attack, it was blown up by an enemy landmine and stood in the depths of Finnish positions almost until the end of the "winter war". The adoption of the T-100 was considered inappropriate.

The events on the Karelian Isthmus led to the idea of creating a tank with a much more powerful gun, capable of destroying pillboxes with direct fire. In a short time (for this, twenty designers of the artillery design bureau under the leadership of N.V. Kurin were transferred to the barracks, which had a wonderful effect: without leaving the premises and working 16-18 hours a day, they managed in two weeks) a unique A 52-ton KV-2 "high-quality artillery reinforcement" tank, armed with a 152-mm M-10 howitzer in an oversized rotating turret and three machine guns. The howitzer, firing a 52-kg armor-piercing projectile, broke through an armor plate 72 mm thick at a meeting angle of 60 degrees from a distance of one and a half kilometers. At the same time, the tank retained good cross-country ability and developed a speed of up to 35 km/h.

#### Heavy tank KV-1 Serial

production of the KV-1 and KV-2 began in February 1940 at the Kirov plant. For the successful completion of the government task, Saltsman, Kotin and Spirits were awarded the Orders of Lenin. According to the decision of the Council of People's Commissars of the USSR and the Central Committee of the All-Union Communist Party of Bolsheviks of June 19, the Chelyabinsk Tractor Plant was also connected to the production of KV. Starting in November, instead of the L-11, the F-32 cannon designed by V.G. was installed on the KV-1. Grabin. In the conditions of a tank, the practical rate of fire of the gun was 2-3 rounds per minute. In terms of ballistic characteristics, the Grabin gun was no different from the Makhanov one, both had their drawbacks and advantages constructively, and both were put into service. That's just I.A. Makhanov turned out to be a member of a "military conspiratorial organization" and, on the instructions of this organization, made "wrecking cannons." The wrecking designer had to be shot, and the L-11 was taken out of production. Even earlier, they began to dismantle from tanks and send to warehouses 76-mm guns of the "enemy of the people" P.N. Syachintov. In total, 243 KV-1 and KV-2 units were built in 1940, and 393 units in the first half of 1941. No army in the world had such powerful combat vehicles. Inspired by the success and support of the leadership who had fallen into megalomania, Kotin set about creating monster tanks KV-3 (objects 220, 221, 222, 223 with various weapons options) weighing 65 tons and armor up to 90 mm thick, KV-4 (object 224) - 80 tons and 130 mm, KV-5 (object 225) - 100 tons and 170 mm! They were supposed to install a diesel engine with a capacity of 1200 hp. and a 107 caliber gun

mm.

The path of the "thirty-four" to the troops turned out to be more thorny. Koshkin's bureau (military engineer A.Ya. Dick managed to be shot and forgotten) presented the prototypes A-20 and A-32 in the summer of 1939. During tests in Kharkov and "brides" in Kubinka, both vehicles demonstrated approximately the same driving performance and a maximum speed of 65 km / h, generally surpassing all domestic tanks in service. However, the 19-ton A-32 had more powerful armament and thicker armor (30 mm versus 25 mm for the A-20) due to the rejection of the wheel propulsion, with half the labor intensity

manufacturing. In addition, the A-32 had a significant margin for increasing the mass, which left the possibility of its further improvement. Outwardly, it differed from the A-20 in the presence of five pairs of road wheels. On December 19, the Defense Committee ordered to adopt the Red Army

soon as possible with an , obliging the designers to provide the T-34 tracked tank as improved model with stronger armor.

4! TESTE

ABY — heh: I'm AI michin +

Medium tank T-34 model 1940 The first prototype of the T-34 was manufactured by plant number 183 in January 1940. The new tank weighed 26.3 tons. Its hull was welded from rolled armor plates. The upper and lower frontal sheets with a thickness of 45 mm were located at an angle of 60 degrees; the upper part of the side had a bevel of 45 degrees. Armor of the stern and sides - 40-45 mm, the roof of the hull and turret - 20 mm. The driver's hatch was located in the frontal sheet of the hull. A very perfect form of the case was the brainchild of M.I. Tarshinov, who took part in the Turtle project. To the right of the driver's hatch there was a loophole, covered with an armored cap, for installing a DT course machine gun, from which a radio operator fired. The tower was welded, oval streamlined; the forehead and sides had a slope of 30 degrees. The tower housed the loader and the commander, who simultaneously acted as a gunner-gunner. Initially, a 76-mm L-11 cannon coaxial with a machine gun was installed in the tank, and then the Grabin F-34 with a barrel length of 40 calibers, which pierced 60-mm armor from a distance of 1000 meters.

Diesel engine V-2 with a power of 400 hp and power transmission were located in the stern. Suspension - individual, spring. The undercarriage included five double rubber-coated road wheels on each side. The 71-TK-3 radio station was installed on command tanks. Despite patriotic arguments about the domestic priority and the revolutionary design of the T-34, he largely repeated the French S-35 in an improved version.

In February 1940, two brand new "thirty-fours" were preparing for the highest display of new military equipment, which was to be held in Moscow in mid-March. However, Koshkin, who possessed remarkable penetrating power, did not have such powerful patrons as, for example, Zhores Kotin had. At this time, Marshal K.E. Voroshilov, as the main vehicle for the Red Army, lobbied for a tank named after himself, and his deputy for weapons, Marshal G.I. Kulik pushed through the T-50 escort tank, which in many respects was not inferior to the T-34, was almost twice as light and three times cheaper. In parallel, Kharkiv residents were obliged to continue work on the wheeled-tracked A-20.

In early March, Grigory Ivanovich called Kharkov and forbade the shipment of prototypes of the T-34 to Moscow, motivating his decision by the fact that they had not passed factory tests in full, in

in particular, they did not reach the required 2000 km of run. Formally, Kulik was right, if you forget that the KV was put into production, having "run" about 600 km.

Director of the Kharkov plant Yu.E. Maksarev made a bold decision: in order to gain the missing kilometers, under the leadership of M.I. Koshkin to send tanks to the capital on their own. During a twelve-day journey in difficult winter conditions, the T-34 showed good results: the specific engine power was 18 hp. per ton of weight, maximum speed - 55 km / h, specific pressure on the ground, due to the use of wide tracks, - 0.64 kg / sq. cm (that is, even less than that of the 9-ton German R7. Krj \ m. P), the power reserve is 300 km. March 17 in the Kremlin, "thirty-four" demonstrated the Soviet leadership. After that, they were tested at the Kubinka training ground and set off on their way back along the route Minsk - Kyiv - Kharkov. Members of the Politburo liked the tank, and on March 31 it was decided to put the T-34 into mass production.

Serial production should have been deployed at the Kharkov Locomotive Plant, and since October at the Stalingrad Tractor Plant. The plan for 1940 provided for the construction of 500 tanks in Kharkov and 100 in Stalingrad. However, it was smooth on paper. By July, KhPZ produced only four serial tanks, and not a single one at STZ. In October, due to the non-delivery of guns to plant No. 183, out of 55 manufactured tanks, one was handed over to the customer, in Stalingrad - not a single one. The fate of the T-34 was still up in the air. The question of its complete alteration or replacement with another combat vehicle was repeatedly raised. In addition, on September 26, M.I. died of pneumonia. Koshkin - the March adventures with swimming in ice water affected. Koshkin's place was taken by A.A. Morozov.

In November-December, serial cars, at the direction of G.I. Kulik were subjected to intense shooting and running tests along the route Kharkov - Kubinka - Smolensk - Gomel - Kyiv - Kharkov. The tests were carried out by NIBTPoligon officers, who submitted a purely negative report as a result. The commission team revealed so many design flaws and comments. in many respects quite fair and justified, that there were doubts about the combat capability of the tested vehicles in general. Marshal approved the report, stopping the production and acceptance of the T-34.

The plant management did not agree with the customer's opinion and appealed this decision to the head office, proposing to continue production of the new tank with the warranty mileage reduced to 1000 km. Kharkovites were supported by Marshal K.E. Voroshilov and Minister of Medium Machine Building V.A. Malyshev. The case ended with the fact that in 1940 only 115 "thirty-fours" were produced instead of the planned 600. By the spring, the production of machines that had become more technologically advanced, cheaper and more reliable, having received a cast tower, gradually improved.

At the same time, the designers were instructed to develop a new machine - the T-34M with 75 mm armor, a more compact, efficient and less vulnerable torsion bar suspension, a planetary gearbox, with a V-5 diesel engine with an HP 600 power. an oversized turret, with a commander's turret and

crew of five. Maksarev and Morozov fought to have the tank named "Joseph Stalin" but were not allowed to. Documentation for the new car was prepared by March 1941, and

the production of two "improved" reference samples began; in May, the hulls, turrets were ready, the elements of the undercarriage were worked out. The plan approved by the government provided for the release in 1941 of 2800 T-34s, including 500 T-34Ms. However, neither the V-5 diesel nor the planetary gearbox ever appeared. With the start of the war, work on the new tank was stopped, leaving all the forces for the mass production of the base model.

Until June 22, 1941, they managed to build either 1225 or 1400 "thirty-fours" (the Russian Ministry of Defense has not yet decided on this issue), which later became the most massive combat vehicle of the Red Army; in total, more than 35 thousand units of T-34-76 were produced.

When, after a two-year friendship, Nazi Germany "treacherously" attacked the USSR, the Wehrmacht had 5262 tanks and 377 assault guns of its own production and about 2000 captured French vehicles. To implement the Barbarossa plan, these rogues allocated 3865 units. "Heavy" Ruth. [The Germans were able to detach 439 pieces, medium RU. Sh - 965, everything else is light and very light vehicles, including 410 machine guns R7. 1, nicknamed the "Krupp sports car" by the troops. Of the total number of "panzers" intended for operations in the East, 354 tanks until September 1941 were in Germany, in the reserve of the Supreme High Command. In addition, the divisions and escort companies had 246 ZaS assault guns. Sh, about 140 anti-tank self-propelled guns R? 7. ]Thad. Guy a couple of dozen self-propelled 150-mm guns. Speaking about the frail saturation of the troops with armored vehicles, General B. Müller-Gillebrand complains: "Their number was insufficient. The fact that, according to their tactical and technical data (armament, armor protection, patency), the tanks of the available types did not meet the requirements that were presented to them in the East, it became clear only after the start of hostilities and was an unpleasant surprise ›.

It's not worth counting the combat vehicles of Germany's allies yet, since not one of them attacked us on June 22, either suddenly or treacherously, and some were not going to, until Comrade Stalin "convinced" them to join Hitler with preventive bombing.

On June 22, 1941, the peace-loving Country of Soviets had 25,500 tanks, including: 1861 units (or 2111, also quite an official figure) that had no equal in terms of tactical and technical characteristics of the KV and I 'thirty-fours", 481 "obsolete", but still superior to any enemy equipment, a reliable and well-developed medium tank T-28, almost 13,000 light, but still armed with a 45-mm cannon, T-26, BT-7 and BT-7M, as well as 3258 cannon armored vehicles .

Moreover, 15,500 tanks (including 1,515 T-34s and KVs) were located directly in the western border districts. Let about 2,800 of them pass through the 3rd and 4th categories, that is, they required medium and major repairs. (In these columns, there were 558 T-37 "floaters", 465 T-27 wedges that had no combat value, 266 BT-2 tanks and two-tower T-26s, which, in principle, did not

they were going to repair it - a direct road to the smelting. Interestingly, on this occasion, the speech of General Ya.N. Fedorenko at a meeting of the commanding staff in December 1940: "This year I was out of action

mass of combat and auxiliary vehicles. At the request of the districts, 21,000 vehicles require major repairs, and when checked, many vehicles require only two hours of time to put them in order.") All the same, the Soviet numerical superiority in the West is more than threefold. We also had such a wonderful machine, designed by N.A. Astrov on the basis of the T-38 tank, - light, high-speed, maneuverable, armored and armed with a machine gun artillery tractor "Komsomolets" T-20. It was intended for towing anti-tank and regimental guns, but could be used and was used as a machine-gun tankette. The Germans generally considered him a tank. Such tractors, which were not much inferior to the "Panzer-", were made 7780.

The most interesting thing is that there is no exact answer to the question of how many tanks were in the Red Army. Researchers give different data, referring to the most accurate archival documents, but they differ from each other not by tens, but by thousands of combat vehicles. For example:

- a statistical study of the Russian General Staff in the column "Was in service" on 06/22/1941 gives a figure of 22,600 tanks (based on an analysis of archival materials and calculations on them);

- almost the same number of tanks - 22,531 - were available according to the "Information on the main indicators of the 1941 mobilization plan and the provision of the Red Army on it", only the "availability" is shown as of January 1, 1941 of the goal and without taking into account 2376 tankettes T-27 (OKHDM G, f. 16, op. 2154);

- The Institute of Military History of the Ministry of Defense of the Russian Federation publishes the "Summary statement of the quantitative and qualitative composition of the tank fleet of the Red Army on June 1, 1941" - 23,106 tanks (data from TsAMO RF, f. 38, op. 11353);

- historian M.I. Meltyukhov indicates "The number of tanks in the Red Army" on June 1, 1941 - 25,508 (RGASPI, f. 71, and so on).

That is, entire German tank groups fit into our "statistical error"!

(The paradox has a simple explanation. A well-known specialist in the field of tank building, a prominent functionary of the military-industrial complex Yu.P. Kostenko, after the collapse of the Union, decided to "rethink the events of the past from the height of the past years" and cite in his memoirs some figures that refute the complaints of Soviet marshals about the German superiority, however, "data on the production of armored vehicles in the USSR, starting from 1932, with the stamp "OV", were stored for more than 50 years and with the same stamp were destroyed in the Ministry of Defense Industry of the USSR in the late 90s." That is first, the government hides documents from society behind seven seals, as terribly secret, then sends them to the incinerator as "unclaimed", and hungers for "the true history of the war." I suspect that when the next streak of "glasnost" comes, there really is nothing interesting in the archives won't stay.)

But Marshal S.K. Timoshenko, in his "reasons" addressed to Stalin and Molotov, predicted that the enemies would be deployed against

The Soviet Union had 10,550 tanks, and was still going to fight on foreign territory. But on his own, without the advice of the Leader, he could not decide which was more correct: to capture Krakow with a powerful blow and "cut Germany off from the Balkan countries and deprive it of its most important economic bases at the very first stage of the war" or, nevertheless, first "defeat the German army within East Prussia and take possession of the latter.

With such a balance of forces, the Red Army, it seemed, was able to roll any enemy into a thin pancake. In order to prevent aggression, it would be enough just, instead of hiding in the forests, to build this mass of combat vehicles along the Soviet-German border. However, it turned out the opposite: by the end of 1941, the Germans took Minsk, Tallinn, Riga, Smolensk, Kyiv, broke into the Crimea, stood at the gates of Moscow and Leningrad.

Reluctantly "remembering" their crushing defeats and "reflecting" on their causes, the Soviet commanders ruefully shrug their shoulders: they say that history "let go of too little time", and most of our tanks are "obsolete". Not to mention that this is not entirely true, the military leaders quite definitely hint that obsolete means incapable of combat. It is not clear what prevented the "obsolete" tanks from firing and inflicting damage on the enemy. For example, General D.D. Lelyushenko near Moscow "found" 16 T-28 tanks on the Borodino field without engines at all, but with serviceable, possibly outdated 76-mm guns, and, having ordered the hulls to be buried in the ground, created a natural fortified area in the Mozhaisk direction.

It also turns out that there were absolutely not enough "tanks of the latest types." Marshal G.K. Zhukov even accurately calculated how many of these tanks he did not have enough to give the adversary a worthy rebuff - exactly 16,600 pieces (that is, eight of ours per German, it is immediately clear that Georgy Konstantinovich was a great strategist).

And at least not a single "new type" at all!

The motorized corps of General Manstein on the fourth day of the war, having overcome almost 400 km, went to Dvinsk (Daugavpils), not having a single "thirty-four" in its composition. The main vehicles in the corps of General Reinhardt were assembled on rivets and armed with a 37-mm cannon Czech 35 (1) and 38 (®).

By the way, it was against them that the command of the North-Western Front for the first time massively used heavy HF.

On June 23, 1941, in the area of the Lithuanian town of Raseiniai, the 6th Panzer Division of General Franz Landgraf, with two battle groups - the Raus group and the Seckendorf group - captured the bridges across the Dubysa River and occupied two bridgeheads on its right bank. There was simply no weaker division in the Panzerwaffe: out of a total of 254 tanks, its main striking force was 149 Czech type 35 (I) trophies and 36 P7 vehicles assembled in one unit. Sh and Ree. PU. On the morning of June 24, the Seckendorf group was attacked and driven out of the bridgehead by the 2nd Panzer Division under the command of Major General E.V. Solyankin - 250 tanks (fifty KV-1 and KV-2). Soviet tankers crossed to the left bank and, under concentrated fire, hundreds of "panzers" began to iron the positions of the German artillery: "Wrapped in fire and smoke, they inevitably moved forward, crushing everything in their path. The shells of heavy howitzers and fragments did not harm them at all ... The bulk of our

tanks attacked from the flanks. Their shells hit the steel giants from three sides, but did not cause them any harm. The Germans were amazed at the invulnerability and power of the "black monsters", especially when one of them casually crushed the "newest" 35 (t) with caterpillars, and the other withstood a point-blank shot from a 150-mm howitzer without visible damage. Needless to say, they overtook the Germans with fear or, according to the reports of the commissars, "terrified them." But only. Just two days later, the 2nd Panzer Division ceased to exist, not a single combat map survived, General Solyankin died. Landgraf's division repeatedly engaged in battles with the "Voroshilovs", but nevertheless, although "horrified", by the beginning of September it was under the walls of Leningrad, having irretrievably lost only 55 tanks during the entire offensive.

The commander of the 2nd Panzer Group, General Guderian, first drew attention to the new Russian tanks only in October, when, south of Mtsensk, the 15th brigade of Colonel M.E. Katukova, who had 49 combat vehicles (BT-7 battalion, KV company, two T-34 companies), badly battered the 4th Panzer Division of General Langerman. Although in Belarus, as part of the shattered Western Front, there were five thousand of them, the same number perished ingloriously near Smolensk and Roslavl (not counting 4,700 "light and outdated").

The commander of the 1st Panzer Group, General von Kleist, had the hardest time in Ukraine. Against him, 728 tanks, of which more than a third - 219 units - were the "formidable" P7 vehicles. Guy Ru. P, commander of the Southwestern Front, Colonel General M.P. Kirponos alone as part of mechanized formations could put up 4808 tanks (and a total of about 8000), including 833 KV and T-34 units. It was hard not to notice them, as evidenced by the numerous reports that rained down from the German units of artillery and tank units:

"A completely unknown type of tank attacked our positions. We immediately opened fire, but our shells could not penetrate the armor of the tanks, and only from a distance of 100 meters did the fire become more effective ...

... Six anti-tank guns fired quickly at the T-34. But these tanks, like prehistoric monsters, calmly passed through our positions. The shells only made the armor of the tanks beat like a drum ...

... Lieutenant Steip fired four shots at the T-34 from a distance of 50 m, once from 20 m, but could not knock out the tank. Our rapid fire was ineffective, and the Soviet tanks were closing in. The shells do not penetrate armor and break into pieces.

Having entire "herds" of armored vehicles, Kirponos and Zhukov made an attempt to arrange a decisive "kleist" for the enemy, throwing six corps into the counteroffensive ... And in two weeks they lost 4381 tanks! The Wehrmacht managed to achieve such "indicators" only by August 1942 (our generals wrote off almost 30,000 tanks during this time). By the beginning of the fall of 1941, the Kleist group had only 186 "completely disabled" combat vehicles and 147 "under repair". Those who remained in the ranks were enough to close the grandiose Kiev "cauldron" together with Guderian's group.

In a word, in the summer of 1941, the "best in the world" KV and T-34 tanks did not play a significant role in the hostilities. Despite all



praises to them and enthusiastic counts of dents from shells, at that time they were rather imperfect fighting vehicles. Big

a cannon and thick armor is not a tank yet, it is a pillbox. The gun was made by V.G. Grabin, the Izhors made the armor, someone stubbornly adjusted the diesel engine. The task of the tank designer is to calculate the optimal layout of the existing units, design the suspension, transmission, engine compartment, control system, that is, to create a reliable and maneuverable "gun cart". To paraphrase Anton Pavlovich, "everything should be fine" in the tank. KV, created in a competitive race, overly armored for the sake of the idea of invulnerability, adopted for service without actually testing the running gear, had a disgusting transmission, its failure was a massive phenomenon (the gearbox diagram of the Holt tractor, very primitive, the lead designer N. L. Dukhov sketched from an American magazine). When driving for a long time, the water in the radiator began to boil. Unable to cope with the increased load, the turret traverse motors, borrowed from the T-28 tank, burned out. The matter could be corrected in the process of mass production, however, Zaltsman and Kotin were not interested in the transmission. The elimination of a whole list of shortcomings would require a decrease in production volumes, and orders were not given for this. In SKB-2, they inspiredly drew projects for new "mastodons" weighing 80 and 100 tons. The famous designer N.F. Shamshurin, in his declining years, called the KV-1 a tank "not so much for war as for display", the ballast of the Red Army:

"Although the KV had very serious defects from birth, it was possible not only to save the car, but by the beginning of the war to establish the production of tanks that were truly formidable to the enemy. First of all, it was necessary to create a workable gearbox and replace the 76-mm cannon with a weapon appropriate for a heavy tank ... However, nothing was done, and the press replicated enthusiastic responses about the outstanding victory of Soviet tank builders. Around the KV, an aura of some kind of miracle weapon was created, which was facilitated by the reviews of foreign experts who had the opportunity to evaluate only the external characteristics of the tank. Those complaints that came from the troops were simply ignored, and numerous breakdowns were primarily due to poor crew training. There were so many failures that they were dealt with by a special government commission, which discovered the most serious omissions in the design of the machine adopted for service ... "

I must say that the guns befitting a heavy tank were created by V.G. Grabin. In 1940, he introduced the 85-mm tank artillery system F-30 and F-32 - 95 mm caliber. They have been tested and recommended for adoption. However, Stalin suddenly remembered the half-forgotten 107-mm caliber, and the Grabin guns were recognized as not powerful enough.

And there really was a commission, a special commission. It arose in October 1940 after a letter from the military representative of the Kirov Plant L.S. Mekhlis, who headed, among other things, the People's Commissariat for State Control. In a letter, listing the defects of the machine, military engineer 3rd rank Kalivoda summed up: "Based on the foregoing, I believe that the KV machine is underdeveloped and requires urgent and serious alterations ... It is more expedient to reduce the program until the end of 1940 to 5-8 vehicles per month and transfer everything factory forces to finalize the machine. At present, all forces are thrown into the execution of the program, and little is thought about the quality of the machine. I think that at the moment it is impossible to call the car combat-ready because of the above defects. Send

it can only be entered into the army as training, not combat." The commission fully confirmed the conclusions of the representative of the acceptance, and Mekhlis immediately brought them to the attention of Stalin. Along the way, it turned out that the director of the Kirov plant, I.M. Saltzman, however, like all red directors, sinned with a penchant for postscripts and eyewash. (During the war, a talent for victorious reports and promises catapulted him into the chair of the people's commissar of the tank industry, in which he sat for exactly a year. During this time, Isaac Moiseevich did not achieve much progress in the production of combat vehicles, but managed to kill S.A. Ginzburg. At the beginning In 1943, it turned out that the new SU-76 self-propelled guns break down before reaching the front line; but the fact is that, without powerful engines, two GAZ-202 carburetor engines with two gearboxes were put in parallel for "drying", which can be switched it was necessary to synchronously. Is it any wonder that inexperienced drivers had not fully interlocked gear teeth crumbling. S. A. Ginzburg, who worked as deputy deputy commissar Zh. and was sent to the front as the head of the repair service of a tank corps, where he died. Well, like, for example, Albert Speer would have sent Ferdinand Porsche to the front. After the war, when it becomes unfashionable for a Jew in our country, and Stalin drops that every Jew - potential agent of world Zionism, I.M. Zaltsman will be thrown out into the street with a resolution: "Use at work no higher than a master.")

Marshal G.I. repeatedly complained about the poor quality of heavy vehicles. Kulik and Army General D.G. Pavlov. But all of them were unable to overcome the law of socialist economic management, when the main indicator of any enterprise is the fulfillment of a set number of pieces, and the Kirov Plant continued to "drive the plan". True, in 1941 it was envisaged to take a number of measures to improve the KV-1, such as installing a commander's cupola, a planetary transmission, more advanced final drives and a rotary mechanism. But in April, an urgent order came - in three months - to master the still non-existent 70-ton KV-3 tank with a 107-mm gun, and to build 500 vehicles in six months. All work to eliminate the shortcomings of Klima-1 was curtailed as soon as it began. Fulfilling the decision of the Council of People's Commissars, Gorky Plant No. 92 in the shortest possible time issued a 107-mm ZIS-6 gun designed by the same V.G. Grabina with an initial projectile speed of 800 m / s. But the "object 220" did not go into production, as soon as the ZIS-6s were put into production, they were sent for remelting.

"The very first days of the Great Patriotic War confirmed that the KV-1 in the form in which it was produced could not really fight," says N.F. Shamshurin, - since he did not have any guaranteed motor resource. So the tragic paradox turned out: the armor was strong, but the tank did not work fast. It would seem that life itself pushed for an urgent modernization of the KV, for the replacement of an inoperable gearbox, but, alas, in the most difficult time for the country, from the end of the summer of 1941 to the spring of 1942, we continued to spend huge material resources and human resources for further scientific and technical search. In the first military winter in Chelyabinsk, where the Kirov Plant was evacuated, they "invented" the KV-7, which had a built-in gun mount, three guns in a bunch! Completely wasted

the energy of by no means mediocre people, valuable

materials, high-alloy steel was wasted. And until now, that technical adventurism is presented as some kind of achievement ... The KV-1 has completely discredited both itself and the very idea of creating heavy machines.

During the aforementioned battle near Raseiniai, an almost fantastic story took place. While Colonel von Seckendorff's group repulsed the attacks of General Solyankin's Panzer Division, in another bridgehead, six kilometers to the north, there was a Raus battle group with 30 tanks, which, in theory, was supposed to come to the aid of their comrades. But she could not do this, because in her rear, on the only road leading to Raseiniai, a KV tank in the amount of one unit materialized. For almost two days, the Raus group, cut off from its communications, fought this "terrible monster", using tanks, 50-mm cannons, anti-aircraft artillery, and even a sapper sabotage group that managed to mine a Soviet tank at night, until, finally, it managed to win. So, during the entire time of this unprecedented battle, the KV was actively firing at all targets that appeared in the field of view, but never moved from its place, "it stood completely motionless on the road, representing an ideal target." Which, in the end, allowed the Germans to secretly bring an 88-mm anti-aircraft gun to his rear and shoot the tank from a distance of 500 meters (moreover, only two of the seven shells penetrated the armor).

Instead of improving the transmission on the HF, they increased the booking. With the start of the war, the thickness of the turret armor was increased to 105 mm, and earlier production vehicles were reinforced with 25 mm screens, which were bolted to the hull and turret. The tank began to carry at least 100 mm of armor, both frontal and side (it is interesting that photographs of such "bolted" vehicles can only be found in German albums).

The KV-1 did not have any other obvious advantages compared to the "thirty-four". Its armament was the same, and its maneuverability was worse than that of the T-34. "Voroshilov" could smash any road to smithereens so that wheeled vehicles could no longer follow him, and few bridges could withstand his weight. The KV-2 was taken out of production on the second day of the war, since it had nothing to "break through", and its six-inch howitzer was completely unsuitable for fighting armored vehicles.

Things got to the point that in 1942, after the catastrophic defeats of the Red Army near Kharkov and in the Crimea, a decision was being prepared to stop the production of heavy tanks. In August, a member of the Military Council of the Main Armored Directorate, General N.I. Biryukov in the treasured notebook, where the telephone instructions of the Supreme Commander were entered, noted: "The moral authority of the KV tank was shot, and in this GABTU  
guilty."

But the production of KV did not stop. Instead, the KV-1S, modernized by the Dukhov group, began to roll off the assembly line. On it, some of the shortcomings were eliminated, for example, a transmission developed by Shamshurin for 100-ton tanks was used. However, in the pursuit of maneuverability, on the direct instructions of the "Friend of all designers", the thickness of the armor was reduced on the new vehicle, and in terms of its combat characteristics, the KV, "thinner" by 5 tons, came even closer to medium tanks. And with the advent of the Germans "tiger" with an 88-mm cannon "Voroshilov" instantly and completely outdated. The enemy could

hit him with impunity at the limits for a Soviet tank

distances.

In 1941-1942, more than 4,000 units of KV tanks were made, without eliminating congenital defects. It was no accident that in 1943 on the Kursk Bulge the main heavy vehicle of individual tank regiments of the Red Army was the British Mk [Churchill PU].

In the same way, the T-34 tank combined advanced armament and armor solutions with archaic or simply unsuccessful components and mechanisms. In particular, it was the only one of the new tanks that retained Christie's spring suspension, and was noticeably behind Germany and other countries in the design of the transmission and turning mechanisms - this was no longer "worn" in the West. The Fifty-four had the most outdated gearbox of all that existed at that time. On the first releases there was a four-speed gearbox, which required the gears to move relative to each other with the gearing of the desired pair of gears of the drive and driven shafts. Changing gears in such a box was not an easy task and required excellent driver training and considerable physical strength. In addition, the transmission was located in the rear of the tank, next to the drive wheels. Such a solution, on the one hand, made it possible to free the fighting compartment from a bulky gearbox, cardan shaft, on-board mechanisms and to reduce the height of the vehicle. On the other hand, it again required the application of great physical effort to the controls, which were connected to the transmission by metal rods going into the power compartment, which also had a large backlash. As a result, it was impossible to turn on the control lever with one hand, you had to help yourself with your knees or use the help of a radio operator gunner (to switch from 2nd gear to 3rd, you had to apply a force of 46 to 112 kg). Many driver-mechanics used a mallet when something jammed. The gearbox itself was weak, unreliable, and often broke down. When switching, the gear teeth broke and crumbled. In 1942, NIIBT officers, having examined domestic, captured and Lend-Lease tanks, came to the conclusion: "Gearboxes of domestic tanks, especially T-34 and KV, do not fully meet the requirements for modern combat vehicles, yielding to gearboxes as both allied tanks and enemy tanks, and lagged behind, at least a few years, from the development of tank building technology.

The T-34 tower was narrow and cramped even for two people. In battle, the commander, indicating to the driver where to direct or deploy the tank, giving commands to the loader, which shell to send into the breach, falling to the sight to aim the gun, calculate the distance and pull the trigger, immediately dodging the gun barrel rolling back, almost did not have time to see what other tanks were doing, much less to direct the actions of several vehicles. And not only time, but also opportunities.

Firstly, the "thirty-four" did not have a commander's turret and, accordingly, a circular view. Secondly, the available means of observation were very far from perfect both in design and in quality - an order of magnitude worse than German ones. The general view was to be provided by the PT-6 panoramic periscope. The device was

a box with polished steel mirrors installed in it at angles; with excellent Zeiss optics, it is even impossible

compare. Moreover, if at first there were two periscopes in the tower, then in the future, in order to save money, they decided to leave one - with the tank commander. For targeting, a TOD-6 telescopic sight was used. It provided an increase of 2.5 times and, in general, was not bad, with the exception of one drawback - a coaxial installation with a gun bore. When making vertical aiming, the commander was forced to rise or fall in his place, as the sight moved along with the gun.

The driver had his own observation device: "The triplexes on the driver's hatch were made of disgusting yellow or green plexiglass, which gave a completely distorted picture. It was impossible to make out anything through such a triplex, especially in a jumping tank. Therefore, driver-mechanics, even in battle, drove with the hatch ajar. But the tank commander could not even do that. The turret hatch, common to the commander and loader, was heavy, uncomfortable and did not lean forward. In the open state, it simply covered the front field of view. At times, the tank commander had no choice but to control the machine, sitting astride the roof of the tower. Poor visibility from the tank made life easier for the German infantry, who quickly figured out the dead zones of the "thirty-four" and used knapsack charges and anti-tank mines to fight it. For comparison: on the "fascist" P7. Cream. [The surveillance devices had ten, even if you count the commander's cupola with five periscopes as one, and the German radio operator had a telescopic sight with a twofold increase, calibrated for firing at a distance of up to 1200 meters, and ours had a "hole" through which the eye was aligned, diopter, front sight and body of the enemy.

"The war showed a serious underestimation of the role of the crew in ensuring the maximum combat effectiveness of the tank," writes Yu.P. Kostenko. - The initial desire to reduce the number of crew members, as well as the volume and dimensions of the tank for the sake of increasing the level of armor protection, led to the fact that the tank was practically without a commander in battle with a living and combat-ready crew member, who was listed as the tank commander according to the staff list. This happened as a result of the fact that the functions of both the tank commander and the gunner were assigned to one crew member ... As soon as the gunner commander began to fire from the cannon, he stopped performing the functions of commander for the entire duration of the battle. He physically could not, while waging a duel, observe the battlefield, conduct an all-round view, observe the actions of other tanks ... Such a decision contradicted the basics of organizing a battle with the use of tanks.

It was this factor - "commander - gunner" - that became one of the most important reasons for the huge losses of our tanks. That is why, despite the huge superiority in the production of tanks, the Germans actually had a numerical superiority on the battlefield ...

The war confirmed that the tank does not require the minimum number of crew at any cost, but the crew needed to maximize the combat capabilities of the tank, only in this case, losses in tanks and, consequently, losses in personnel will

the least."

The tightness and "blindness" of the T-34 naturally limited it

maneuverability on the battlefield, reduced the rate of fire and the effectiveness of fire. If in range conditions when firing from a gun it was possible to achieve an indicator of 3-4 rds / min, it was believed that the crew was well trained. As for the Degtyarev tank machine gun of the 1929 model, in terms of its characteristics it was inferior to the German MS 34, and the military repeatedly asked to replace it with something more durable and faster-firing. A characteristic disadvantage of DT was the location of the reciprocating mainspring directly under the barrel; when overheated, the spring shrinks and loses the force of the working preload. As noted at one of the meetings in GBTU, Major General N.S. Ogurtsov, "after 2-3 long bursts, the machine gun "spits", the dispersion of bullets is so large and the bullets fly so incorrectly that the bullets lie flat on the shield."

Another problem was the increased gas contamination of the fighting compartment due to the penetration of powder gases into the tank after each shot from the cannon. To remove them, an electric fan was installed in front of the turret, inherited from the BT with a 45-mm gun, low-powered and inefficient. In battle, it was not uncommon for the loader to faint to the point of fainting. From the speech of General N.S. Ogurtsova: "Back in 1940, the issue of ventilation in the fighting compartment of the tank and purging the bore of the gun barrel after a shot was raised, but this was not given any importance, and some even reacted to this with irony."

The engine air filter was just as bad, which, in fact, did not filter anything, it even passed clean air with difficulty, leading to rapid engine wear. Due to an unsatisfactory cooling system, the power of the V-2 dropped to 315 hp in the summer, and the tank could not reach speeds of more than 30 km/h.

The shortwave radio station 71-TK-3, installed only on command tanks, provided reliable two-way telephone communication at a distance of 4-6 km on the move, was unstable, complex, and often failed. For communication between crew members, the TPU-3 intercom was intended, according to the recollections of tankers, it was completely useless. "The intercom worked ugly," recalls S.L. Aria.- Therefore, communication was carried out with my feet, that is, the tank commander's boots were on my shoulders, he put pressure on my left or right shoulder, respectively, I turned the tank to the left or right ... I put my fist under the loader's nose, and he already knows that it is necessary to charge with armor-piercing, and the outstretched palm - with fragmentation.

And wow, of course, our tanks did not shine with "excessive comfort."

The notorious "fireproofness" of the T-34 and KV has become almost a legend, since they, they say, were equipped with diesel engines. In fact, tanks with diesel engines burned no worse than cars with carburetor engines. Of course, setting fire to diesel fuel with a match is more difficult than gasoline. However, from a projectile hit, the fuel tanks detonate in the same way, regardless of the type of fuel, and on the "thirty-four" they were also not in the stern, but on the sides of the fighting compartment, covered from the outside by not too powerful armor, and from the inside - by a sheet iron falyphsbort. "Like candles," wrote the political instructor of the 161st tank brigade L.I. Chernenkov, our mighty ones are burning

KV and T-34, and with them cadres of tankers ready for anything are dying.

By the way, having examined the power plant of the German "tiger", the engineers of the Kubinka test site came to a paradoxical conclusion: "The use by the Germans on a new tank of a carburetor engine, and not a diesel engine, can be explained: ... a very significant percentage of fires in tanks with diesel and their lack in this respect of significant advantages over carburetors, especially with the competent design of the latter and engines, the availability of reliable automatic fire low survivability extinguishers; short life of tank engines due to the extremely of tanks in combat conditions, due to which the cost of gasoline saved in the case of using a diesel engine on a tank does not have time to justify the increased consumption of alloyed steels necessary for a diesel engine and highly skilled labor, no less scarce in the military time than liquid fuel.

Thus, the only relative advantage of using a diesel in a tank was a doubling of the power reserve, due to the low specific fuel consumption, and the ability to work on cheap heavy grades. But this is only theoretical, since the V-2 diesel engine itself was still far from perfect and did not have a guaranteed motor resource. It, like many other new equipment, was adopted "in advance". But even in November 1942, at a technical conference on diesel engines, representatives of the GBTU noted that the warranty period of 150 hours indicated in the form did not correspond to reality, in real life it rarely exceeded 80-100 hours (while the Maybachs had resource from 300 to 400 hours). Soviet vehicles of 1941 could not withstand long marches.

In the spring of 1942, samples, naturally the most standard, of Soviet military equipment were transferred to the USA and Great Britain. At the Aberdeen Proving Ground, the Americans tested the sent copies of the T-34 and KV:

"After a run of 343 km, the T-34 medium tank has finally failed and cannot be repaired," Major General Khlopov, head of the 2nd Directorate of the GRU, reported on the test results. - The reason: due to an extremely poor air cleaner on a diesel engine, a lot of dirt got into the engine, and an accident occurred, as a result of which the pistons and cylinders collapsed to such an extent that they cannot be repaired ...

Everyone without exception likes the shape of the hull of our tanks. T-34 is especially good. Everyone agrees that the shape of the T-34 hull is better than on all vehicles known to the Americans, the KV is worse than on any of the tanks existing in America.

Armor. The chemical analysis of the armor showed that the armor plates on both tanks had a shallow surface hardening, while the bulk of the armor plate was mild steel. In this regard, the Americans believe that by changing the technology of hardening armor plates, it is possible to significantly reduce its thickness, leaving the same resistance to penetration. As a result, tanks can be lightened in weight by 10% with all the ensuing consequences ...

Tower. The main disadvantage is that it is very tight. The Americans cannot understand how our tankers can fit in it in winter,

when they wear coats. Very poor electromechanism for turning the turret. The motor is weak, very overloaded and sparks terribly, as a result, the resistance of adjusting the speed of rotation burns out, the gear teeth crumble. It is recommended to convert to a hydraulic system or just to a manual one. (There was already a manual drive, and in battle our tankers preferred to turn the turret "just manually".)

Armament. The F-34 gun is very good. Simple, trouble free and easy to maintain...

Suspension. On the T-34 tank - bad. The Christie-type suspension has long been tested by the Americans, and it was unconditionally abandoned. On our tank, due to poor steel on the springs, it sags very quickly and, as a result, the clearance decreases noticeably. The suspension on the KV tank is very good.

Engine. The diesel is good, light ... The disadvantages of our diesel are a criminally bad air cleaner on the T-34 tank. The Americans believe that only a saboteur could have designed such a device. Testing it in the laboratory showed that the air cleaner does not clean the air entering the motor at all, and its throughput does not provide the necessary amount of air to flow even when the motor is idling. The filter on the KV tank is better made, but even it does not provide an influx of normally purified air in sufficient quantities. Both machines have bad starters - low power and unreliable designs.

Transmission. Beyond any criticism - bad. An interesting incident happened. A KV tank transmission repairer was amazed that it was very similar to the transmissions with which he worked 12-15 years ago. The firm has been requested. The firm sent drawings of its transmission type A-23. To everyone's surprise, the drawings of our transmission turned out to be a copy of those sent. The Americans were struck not by the fact that we copied their design, but by the fact that they copied a design that they abandoned 15-20 years ago. On the T-34 tank, the transmission is also very bad. During operation, the teeth completely crumbled on it (on all gears).

Side clutches. Beyond any criticism - bad. In America, the installation of friction clutches even on tractors was abandoned several years ago (not to mention tanks). Apart from the flaw in the principle itself, our clutches are extremely sloppy-machined and have poor steels, which leads to rapid wear, facilitates the penetration of dirt into the drums, and by no means ensures reliable operation ...

Comparing the characteristics of American and Russian tanks, it is obvious that driving the latter is much more difficult. The Russian driver is required to have virtuosity when shifting gears on the move, special experience in using side clutches, extensive experience as a mechanic and the ability to keep the tank in running condition (adjusting and repairing constantly failing parts), which greatly complicates the training of tank drivers.

Judging by the samples, the Russians in the production of tanks pay little attention to the thoroughness of processing, finishing and technology of small parts and parts, which leads to the loss of all the advantages arising from a well-thought-out tank design, in general. Despite the advantages of using a diesel engine, good tank contours, thick



armor, good and reliable weapons, successful track design, etc., Russian tanks are significantly inferior to American ones in terms of ease of driving, maneuverability, strength of fire, speed, reliability of mechanical structures and ease of adjustment.

In the initial period of the war, the quality of combat vehicles only worsened. This was due to the evacuation of many factories, a lack of raw materials, a decrease in the skills of the workforce and a bet on mass production, due to huge losses in military equipment. The tanks were produced without radio stations, without tower fans, with "locomotive" track rollers - without rubber tires. They were equipped with a diesel engine with a cast-iron crankcase instead of an aluminum one, or an M-17 carburetor engine.

In June 1942, the "armored commissar" N.I. Biryukov summed up the instructions of Comrade Stalin point by point:

"...2. The main defect of our tanks is that they cannot make long transitions.

3. The weak point in tanks is the unreliability of transmission mechanisms, transmissions.

4. The tank should be simple, rough, hardy, designed for an average tanker.

5. Focus on improving tanks..."

Deficiency of alloying additives, violation of the technologies of steel melting, heat treatment and cutting of armor plates entailed a deterioration in the quality of the armor. In the autumn of 1942, the Central Research Institute of the People's Commissariat of the Tank Industry repeatedly raised the issue of the low quality of the produced tank turrets and armored hulls:

"At all ferrous metallurgy and tank industry plants producing 8-C grade armor plate, during field tests, there is a significant defect in the fragility of defeat and low armor resistance ...

On the details of the sides of the T-34 machines, cutting out configurations for hardened metal is used. Any fire cutting on such parts is fraught with the risk of cracking in the places of cutting. At UZTM, as a result of fire cutting on hardened metal, 50% of the parts are obtained with tears and cracks ... "

Around the same time, American experts noted that the hardness of the armor of Soviet tanks did not correspond to passport data and changed on various armor plates.

The problem of quality is a separate issue. Heroic home front workers often gave the army a frank marriage, both in wartime and in peacetime, and representatives of the acceptance lured in the rear accepted this marriage and, under the resolutions of rallies and oaths of allegiance to the Motherland and Comrade Stalin, were transferred to the troops.

For example, in 1940, a scandal broke out when, during the shelling of the German "troika" from the native 45-mm cannon, it turned out that the regular

the armor-piercing projectile BR-240 does not penetrate 30-mm cemented armor from a distance of 400 meters, but should from a distance twice that. The investigation revealed that the heat treatment of shells of the 1938 model was carried out according to a reduced program, in order, therefore, to fulfill and exceed socialist obligations on the shaft. As a result, the shells of the Red Army were given a lot, but in a collision with armor that has surface hardening, they simply

shattered into pieces. Later, they began to produce shells of "normal quality", but both of them coexisted in military depots, not to throw away the good. During the war, mass production of ammunition was established at non-core civilian enterprises, pot and furniture factories, with significant deviations from technology and the use of ersatz explosives, such as chalk, or without it at all - just a blank (in besieged Leningrad, ground cones were used as one of the explosive components) . By the end of 1941, our "forty-five" in terms of armor penetration was barely on par with the German 37-mm cannon PaK 35/36, which also had sub-caliber shells in the ammunition load with an initial speed of more than 1000 m / s.

Therefore, the declared tabular performance characteristics of Soviet equipment, taken from reference samples, and the real parameters of serial vehicles and other ammunition are "two big differences."

During the war, the severity of acceptance decreased even more, and there were often cases when equipment arriving from factories was sent here for repairs or "brought up" in parts. And at the artillery plant No. 92 "New Sormovo" there was no acceptance at all for almost a year! Director A.E. Yelyan complained to his relative, GKO member L.P. Beria, that the very principled military "do not understand the situation", and the military representatives were recalled from the enterprise. As a result, amazing combat vehicles began to arrive at the front, in which iron pipes protruded from the towers instead of guns.

"There was no time for fat," recalls L.I. Gorlitsky. - The customer sometimes accepted tanks, even if they did not break down during a run around the plant and drove onto railway platforms under their own power, this most often did not prevent the tank from making one or two attacks, and in those conditions the tank rarely lived longer ... During the war, a medium tank or self-propelled guns lived at the front from three days to a week, managing during this time to take part in two or three attacks and fire from a cannon, at best, from half to one ammunition load.

Based on such statistics, tanks were made - for 2-3 attacks, but more in number. Only a country with inexhaustible resources can do this. A German tank was enough for an average of 11 attacks.

On the march and on the battlefield, the unreliable and crude "thirty-four" was inferior in speed, maneuverability and power reserve to the well-developed and run-in German "troika", which had not a "fake", but a genuine registration certificate. Theoretically, the Soviet tank was superior to the enemy in terms of armor and armament, but the degree of this superiority and the ability to use it varied greatly and finally came to naught depending on the influence of the above factors.

Let us pay attention to the difference in approaches that were laid down long before the war. Decree of the Defense Committee with the task of

the production of a new type of heavy tank came out in August 1938. In September 1939, the KV tank was presented to the government, and in December, without even carrying out factory tests in full, the tank was put into service. And then they demanded from the Kirov Plant from the second half of 1940 to stamp 12 pillboxes with wheels per day. What else can Director Saltzman's head hurt about? It was even more interesting with a fundamentally new T-34M model: the tank was not yet in sight, individual components and parts made (and not made) by different

factories, they didn't even have time to put them together, as on May 5, 1941, the decision of the Council of People's Commissars of the USSR and the Central Committee of the All-Union Communist Party of Bolsheviks followed: "Start mass production of improved T-34 tanks at factory No. in 1941, the release of 500 pieces of improved T-34 tanks. German firms began concrete development projects for main battle tanks in 1934. The Germans had the same problems: enemies all around, lack of tank building traditions, lack of personnel: "The loss of qualified personnel and the lack of the necessary equipment caused our wishes in the field of tank building to be quickly implemented. Particularly great difficulties arose in the production of special steel for tanks, which had to have the necessary viscosity; the first samples of steel plates for tanks broke like glass. It also took a lot of time to set up the production of radio equipment and optics for tanks. Therefore, prototypes left the shops only in 1936 and were tested for more than a year before an order from the military department followed.

Let's take R7. Sh. It was about him that the head of ABTU Fedorenko reported to Voroshilov: "I believe that the German army in the face of the specified tank today has the most successful combination of mobility, firepower and armor protection, backed up by a good view from the crew's workplaces." The first batch consisted of 15 units and did not go into serial production due to insufficient armor (14.5 mm) and suspension defects. Modification "B", with a fundamentally new chassis and ventilation system, released in 1937, also consisted of 15 cars. This was followed by a third series of 15 tanks with improved turning mechanisms. In the first half of 1938, Daimler-Benz made 30 tanks protected by 30 mm armor and with increased fuel tanks (which were placed on the floor of an isolated power compartment). And only in October 1938, after the painstaking treatment of childhood diseases of the design, large-scale production began - 15 tanks per month - of the P7 models. TIME W Ap5\$6. E and E continued (at exactly this pace) until July 1940.

P7. [Wu went through a similar path to the troops. In April 1942, having received a 75-mm long-barreled gun, the "four" surpassed the Soviet T-34-76 in almost all main parameters and for a year and a half took first place among medium tanks.

Engineers of the Third Reich began to develop heavy machines in 1937, but it was supposed to adopt the well-known "tiger" in 1942, as part of the planned rearmament of the Wehrmacht (from this, by the way, we can conclude that Hitler was not going to attack the USSR and wanted "delay the war" until 1942. Although everyone understands: they start fighting not when the next rearmament of the army is over, but when they really want to and the necessary political and economic prerequisites have been created).

The quality of Soviet armored vehicles improved markedly only by the beginning of 1943, when the "quantitative issue" was resolved. Only by 1944, having received an 85-mm cannon, a commander's turret, a five-speed gearbox, new observation devices, a 9-R radio station (a license was bought from the British) and a fifth crew member, did the "thirty-four" become a full-fledged medium tank. It was

a completely different car, and by this time it had worthy opponents on the battlefield.

And all the same, it was impossible in principle to completely get rid of the "birthmarks" of Stalinist socialism. So, the products of the Gorky plant No. 112 "Krasnoe Sormovo" and in the spring of 1945 at the front were known as "Sormovo freaks." When in victorious May the Red Army ended the war with Germany, having over 35 thousand tanks and self-propelled guns in service, all of them instantly turned out to be unsuitable for operation in peacetime, when the life of a machine is measured not in days, but in years. The post-war decade and unthinkable sums were spent on a program of "eliminating design flaws" with the sole purpose of getting the tank to run for at least five years.

All this time, the "panzers" were normally operated, were in service with the armies of Czechoslovakia, Turkey, France, Spain, Finland, Bulgaria and Syria. The last "quartets" took an active part in the Arab-Israeli wars until 1967.

Of course, when evaluating the capabilities of the opposing sides, one cannot reduce all calculations to the number of one type of equipment and stupidly compare the thickness of the armor and the caliber of the guns. The French army also had superiority in tanks over the Wehrmacht and the Maginot Line to boot, and lost the 1940 campaign outright. As G. Guderian wrote: "Theoretically, we set ourselves the goal of being comparable in the field of armed forces with our well-armed neighbors. In practice, however, especially with regard to armored forces, we could not even think of having in the near future such weapons that would even approximately equal in quantity and quality the weapons of neighboring states. Therefore, we first of all tried to catch up with them in terms of the organizational structure of the armored forces and their management. The main detail of any weapon is the head of its owner. It is not enough to have a "fool" of 45 caliber in the closet, you must be able to use it. It was not worth our marshals, for example P.A. Rotmistrov, to compose fairy tales that "we still have several times fewer tanks than the Germans." Still, the red generals had something to fight: the Red Army had not just a lot of tanks, but more than all the armies of the world put together, tanks of various types and designs, including those with unique characteristics.

Well, except without the ability to "dig in".

## Chapter 2

Immediately after the end of the First World War, theorists of all countries began to generalize its experience in order to determine the direction of the construction of the armed forces, the nature of the future war and the role in it.

various branches of the military. The strongest impetus to the development of military thought was given by the appearance on the battlefield of aviation, chemical weapons and armored vehicles. Enthusiasts of new types of weapons gave them the palm in the upcoming battles. So, the Italian General Douai passionately fell in love with heavy bombers, and Fries preferred poisonous gases to everything.

Former Chief of Staff of the British Panzer Corps General

J. Fuller in 1922 published the book "Tanks in the Great War of 1914-1918", in which he argued that the Entente managed to win this war solely thanks to tanks, and the future one would definitely be a mechanized war. It will require few people and a lot of the latest military equipment. The construction of the army should follow the path of increasing mobility, "for mobility is more important than numbers." Of particular importance is the increase in the individual power of an individual fighter. According to Fuller, the ideal army to strive for is not an armed population, but a mobile professional army. Of the conscripts, only second-line units should be formed, the purpose of which is the occupation of an enemy country. The main blow will be delivered by a mechanized army consisting of 6-8 tank divisions (up to 2,400 tanks and 100,000 mercenaries).

The German generals in the 1920s involuntarily had to adopt the theory of the "small army". For a small, highly trained Reichswehr, the theory of mobile strategy was developed. "All future methods of warfare," wrote General von Seeckt in 1921, "seem to be connected with the use of mobile armies, relatively small, but of high quality and operating effectively with air support." The Germans have so far had to imitate aviation and armored vehicles.

The main supporter of mechanized warfare in the Reichswehr was Heinz Guderian. He summed up his reflections with the conclusion: "Of all ground means, the tank has the greatest decisive power." That is, the force that "will allow a soldier in battle to deliver his weapon as close as possible to the enemy in order to destroy him." In 1928, the General Staff entrusted Guderian with the task of developing the tactics of using tanks. The colonel analyzed the work of foreign military theorists, added his own ideas, went on an internship in Sweden, visited a tank school in Soviet Russia. He then returned to Germany to begin the implementation of a plan of action that emphasized an armored attack of a force that neither German commanders nor potential opponents from other European countries expected.

In 1929, Guderian concluded that "tanks can only be used most effectively when all other branches of the army supporting tanks are given the same speed and maneuverability. Tanks should play a leading role in formations consisting of various types of troops; all other branches of the armed forces are obliged to act in the interests of tanks. Therefore, it is necessary not to attach tanks to infantry divisions, but to create tank divisions, which should include various types of troops that ensure the effectiveness of tank operations ... It was clear that the effectiveness of a division largely depends on how motorized infantry units and artillery will move, as well as other units and divisions of the division. Half-track lightly armored vehicles were needed to transport

motorized infantry and sapper units and units of the sanitary service, self-propelled guns for artillery and anti-tank divisions, as well as tanks of various designs for reconnaissance and communications battalions.

Guderian was not an abstract armchair theorist. The creator of the Panzerwaffe at the age of 40 had a rich and varied experience: he served

in the infantry, in communications units (and understood the role of radio in military affairs), went through a school of work in headquarters at various levels, dealt with the organization of road transport and rear organization, developed and taught the tactics of using tanks and tirelessly tested new ideas at the training ground, even if armored vehicles replaced by plywood-lined tractors, and motorized infantry - by several soldiers with posters "I am a platoon" on their chests, personally studied the structure of combat vehicles and learned to drive a tank. Guderian had a realistic idea of what he wanted to build and how it should work.

To high-ranking generals of the Reichswehr, most of whom had never seen a "live tank", the ideas of the ardent colonel seemed utopian, not taking into account the real political and economic situation in Germany. But four years later the National Socialists came to power. Adolf Hitler understood that in the coming war, motorization "would prevail and play a decisive role."

At the beginning of 1934, Guderian had the opportunity to demonstrate to the Fuhrer the actions of units of motorized troops. As it seemed to the general, a typical tank attack would be preceded by reconnaissance companies on motorcycles or armored vehicles, groping for weaknesses in the enemy defenses and reporting information by radio to the command post to coordinate the entire offensive. The tanks then attack the weak spots in order to break through. As soon as they penetrate the enemy's defense zone, they will not strengthen their positions or wait for the enemy to withdraw, but will continue to move, penetrating deeply into enemy territory, destroying command, communications and supply points. Anti-tank guns would follow the tanks to assist in combating enemy armor and reinforce captured positions, while infantry would follow in trucks to cover the flanks as the tanks advanced.

Guderian proposed to have two types of combat vehicles: a main tank, relatively light and mobile, with an anti-tank gun, and a medium one with a short-barreled gun for direct artillery support of the main tanks. The main weapon of the armored forces is a combination of fire and maneuver, since "only maneuver ensures the full use of fire to destroy the enemy" (the "blitzkrieg" tanks were not intended to fight enemy armored vehicles, and the sudden appearance of Soviet "thirty-fours" on the battlefield was a problem for the Panzerwaffe second plan, which is why General Mellenthin wrote about the "tragedy of the German infantry").

The display was imperfect, and only five platoons participated in it, but Hitler understood everything. He believed in Clausewitz's doctrine of absolute war and the strategy of destruction. At the same time, the Reich Chancellor understood the danger for Germany of a war on two fronts. This means that it was necessary to smash their opponents one by one, in the shortest possible time with minimal material damage, so that with sudden powerful blows

break their will to resist.

Germany's economic possibilities would not have allowed her to wage a prolonged war with the great powers. The way out of this situation could be the strategy of "blitzkrieg", which was supposed to ensure the defeat of any enemy before he was able to fully deploy his military-economic

potential. In June 1934, the Panzer Troops were officially formed, with General Oswald von Lutz and Guderian as Chief of Staff of these troops.

The official military doctrine of the Third Reich was the doctrine of "total and lightning war." The entry of the country into the war from the first minute should have been in the nature of a sudden deafening blow against the enemy with all available power: "The strategy of tomorrow should strive to concentrate all available forces in the very first days of the outbreak of hostilities. It is necessary that the effect of surprise be so overwhelming that the enemy is deprived of the material opportunity to organize his defense. Thus, in Berlin, they staked on the most efficient use of available economic opportunities to prepare the armed forces for individual lightning campaigns, the pauses between which made it possible to accumulate new reserves for the next strike. It was planned to achieve a decisive goal by surrounding and destroying the enemy with the help of tank wedges and pincers.

Aviation was tasked with gaining air supremacy in the very first days of the war, destroying railway junctions, completely isolating the area of decisive combat operations from the rear of the enemy, and providing direct support to its troops on the battlefield. For the complete destruction of the enemy and a higher rate of advance, airborne and motorized troops were prepared.

The principles of preparation and conduct of operations boiled down to the following: massing of ground forces, primarily tank and motorized formations, as well as aviation in the direction of the main attack in order to quickly break through the enemy's defensive lines and rapidly advance deep into his territory, disrupt communication and interaction, capture communications and strategic points, coverage, encirclement and destruction of large groups. Ultimately, it was meant to achieve the complete defeat of the enemy's armed forces at the very beginning of the war. All other strategic, political and economic tasks were solved in accordance with the course of such actions.

The main feature of offensive combat tactics was the desire to simultaneously suppress the tactical zone of enemy defense by aviation and tank forces. Separate tank brigades of military reinforcement and infantry divisions were intended to break through the tactical depth of the enemy's defense. At the same time, aviation was supposed to suppress artillery positions and nearby enemy reserves. After the breakthrough, it was planned to bring tank groups into battle as part of tank divisions and corps, as well as motorized divisions to defeat suitable enemy reserves in operational depth.

Thus, separate tank brigades, together with infantry divisions, were used to solve tactical problems, and tank

divisions and corps - to develop tactical success into an operational one.

The principles of "blitzkrieg" formed the basis of all the strategic plans of German aggression.

On Russian soil, the ideas of mobile warfare with extensive motorization on the ground and in the air were received with understanding and approval. "The appearance of a tank on the battlefield turns into nothing all the cunning mechanics of positional warfare," wrote A.I. Verkhovsky, - and already in 1918.

fortified positions did not exist where tanks were used on a massive scale. If we look at where the evolution of the infantry is going, it will become clear that the day is not far off when all the infantry will put on armor, because without it it will be impossible to appear in clouds of gas and a hurricane of fire ... Whoever has cars and tractors will be able to quick maneuver, able to quickly overcome all difficulties; he himself can easily stop the onslaught of the enemy and constrain his actions. The one who does not bother to start the internal combustion engines in a timely manner, he, even having all the other branches of the military, will be significantly constrained in maneuver and difficult in defense.

But what "small armies" can there be when a world war is needed for a world revolution! The developers of Soviet military theory proceeded from this, taking as a basis the provisions of Marxism-Leninism. Soviet strategy immediately focused on the fact that the new war would be global in nature; At the same time, "considering the existence of two socially opposite systems," the coming world war was seen primarily as a war of a coalition of capitalist countries against the Soviet Union.

"The Red Army," says the resolutions of the Comintern, "the main weapon of the working class, must be prepared in such a way as to fulfill its offensive mission on any sector of the front. The boundaries of this front in the near future are determined by the boundaries of the entire continent of the Old World. Therefore, the fighting will require the participation of mass armies, the tension of all economic forces and will be of a total character.

From the moment they came to power in Russia, the Bolsheviks sought to extend this power to the entire globe of the earth, for "finally communism can only triumph on a world scale"; that is, they were preparing for wars of conquest - the seizure of the territories of neighboring states with their subsequent colonization, blame, Sovietization and the liberation of "labor" from "capital". It was officially proclaimed and repeated many times that the future war would be waged not for the sake of concluding an advantageous peace by defeating the enemy's armed forces, but for joining new lands and populations to the "brotherly family" of the Soviet peoples. "After all, each territory occupied by us," wrote the People's Commissar of the Navy M.V. Frunze, - is, after occupation, already Soviet territory, where the power of the workers and peasants will be exercised ... we, too, will expand into a socialist coalition when new socialist revolutions break out or when we have to occupy one or another area under the rule of capital.

It is clear that the Kremlin was not going to declare war on the whole world at once, except perhaps in the case of a general action by the "world proletariat", but there was little hope for this. "Most likely," predicted I.V.



Stalin - that the world revolution will develop through the revolutionary falling away of new countries from the system of imperialist states. To facilitate this "revolutionary backsliding", an offensive, "active to the highest degree", military doctrine and a strategy of lightning-fast "crushing" each individual enemy in a series of successive "destructive operations" were adopted.

As V.K. Triandafillov - Chief of Operations

Directorate of the Headquarters of the Red Army and one of the creators of the theory of a deep offensive operation:

"Deep and crushing blows can take whole state organisms out of the game quite quickly. In relation to large states, these blows can lead to the defeat of their armed forces in parts, in large packs. These strikes are the surest means for the rapid depletion of the enemy's human and material resources, for creating objectively favorable conditions for socio-political upheavals in the enemy country... Deep and crushing strikes remain one of the surest means for turning a war into a civil war. Lilliputian states can be crushed with one blow.

That is why modern operational art cannot refuse deep blows to crush. A correct and wise policy in the development of the armed forces should provide favorable conditions for waging war by this method.

Soviet military thought recognized that the most effective way to conduct offensive operations was to strike the enemy with huge penetrating force throughout the entire depth of his orders. This required the use of an "all-destroying ram" in the chosen direction - a mass of infantry, tanks, artillery in depth, supported by aviation, with simultaneous "aviation and combat" in the rear of the enemy and with the use of chemical weapons.

The operation was carried out in order to solve two main tasks: first, to break open the enemy's defense front with a simultaneous strike by tanks, artillery, infantry and aircraft to its entire tactical depth; secondly, to develop the tactical success achieved during the breakthrough of the defense into an operational success by the immediate deployment of a mobile echelon of troops while simultaneously isolating the area of the breakthrough from the approach of enemy reserves by aviation.

In order to carry out a breakthrough in the direction of the main attack, it was supposed to concentrate superior infantry forces and means and support them with a massive impact of artillery, tanks and aircraft. The main task of the attack echelon was to break through the enemy defenses. To develop success, a mobile cavalry-mechanized front group was intended. It was planned to use the air force and airborne troops to directly assist the ground forces in a breakthrough and to combat suitable enemy reserves. The simultaneous suppression of the entire depth of the enemy defense was achieved by continuous air strikes on the rear, the decisive advance of long-range tanks, the non-stop advance of infantry with close support tanks, as well as swift actions

mechanized and cavalry formations.

At all stages, the actions of tanks were given special importance. They were supposed to not only accompany the infantry, helping to crack the enemy defenses, but, as A.E. Gromychenko in "Essays on the tactics of tank units":

"Quickly and boldly penetrating into the depths of the enemy's marching formations, the tanks along the way (without getting involved in a long battle) shoot down the enemy's reconnaissance and security bodies, overturn the batteries that had time to turn around in firing positions, bring into the ranks

deployed enemy general disorder, sow panic and disrupt the organization and management of troops deployed for battle ... A deep tank attack is carried out with all possible swiftness. In the first place, this puts "the need for deep tank operations across the entire location of the deploying enemy in order to paralyze his attempts to attack, snatch the initiative and prevent the organized deployment of his main forces."

From this quotation, by the way, it follows that a blow is struck suddenly against an enemy that has not deployed, so to speak, "treacherously" and without a declaration of war. Another theorist, V.P. Kryzhanovsky, considering "typical cases" of the use of tank troops, put the first point: "A raid with the announcement of the mobilization of the enemy on his territory in order to capture the most important border railway junctions and destroy bridges to disrupt or slow down the concentration and deployment of the enemy army. Due to the suddenness of the connection, only insufficiently organized, primitive obstacles are to be expected here (even in the worst case).

It is quite natural that as soon as the USSR began to assemble its own tanks, military theorists raised the practical question of the need to create mechanized formations. "The combat properties of tanks must be used to the full," reminded the inspector of the armored forces of the Republic K.B. Kalinovsky, - and this can only be done as part of an independent mechanized unit, all parts of which would have approximately the same mobility. Therefore, without abandoning the use of tank systems as part of other branches of the armed forces, it is necessary to create special mechanized formations.

Commission of the Revolutionary Military Council under the leadership of S.S. Kameneva came to the conclusion that, organizationally, the mechanized troops of the Red Army should consist of:

- 1) mechanized formations designed both to solve independent tasks in isolation from the main forces, and in interaction with them;
- 2) tank units of the High Command Reserve as a means of reinforcing troops operating in the direction of the main attack;
- 3) tank subunits as part of combined arms formations, intended for joint operations with them.

The organization of a mechanized connection was represented

the following:

a) part of the support (reconnaissance and security) of tankettes and armored vehicles;

6) shock core (attack) of light tanks and tank attack means (machine gun carriers, mortar carriers, self-propelled guns and howitzers);

c) units for capturing and holding the terrain (moving on conveyors);

d) auxiliary parts from sapper, chemical and other means with means of combat nutrition and restoration (repair).

In a theoretical discussion, principles for the use of mechanical units and their organizational forms were developed: tanks must be used massively and suddenly in close cooperation with all branches of the military; main goals

mechanized formations - the development of success after breaking through the enemy's front, his pursuit, the fight against suitable operational reserves. The main principle is "rapid movement and fire", the attack of fortified zones is allowed only in exceptional cases. Since the tank units themselves are not capable of conducting independent operations for a long time and holding the occupied lines, they must be part of larger "motorized mechanized formations".

"Motorized units (MMS) arise due to the fact that mechanized units do not have sufficient strength to hold the captured, and motorized units do not have sufficient penetration power ... The main feature of the use of MMS is the interaction of motorized and mechanized troops ....

MMCs must have in their composition mechanized (tank) and motorized (motorized rifle) units of various branches of the armed forces in the proper proportion, if possible equally fast. They should include off-road vehicles, preferably with light armor for reconnaissance of the path and traffic control.

Although tanks are the "breakthrough core", success is always reinforced by infantry. Therefore, V.P. Kryzhanovsky in 1931 quite reasonably pointed out: "The main core of a motorized mechanized formation should be capable of rapidly advancing on vehicles on the march, fighting in the forest, forcing water barriers and securing space infantry, reinforced by artillery, wedges, high-speed tanks and armored vehicles. In addition, the mechanical connection must be provided by: chemists, sappers, pontoon units, searchlight units, communications units, air defense units, reconnaissance aircraft, fighter aircraft and supported attack and light bomber aircraft. V.P. Kryzhanovsky proposed to form independent mechanized divisions, which should have included: a shock tank regiment, an artillery regiment, two regiments of motorized infantry equipped with light tanks and armored vehicles, an engineering battalion, an air group, a communications company, and a "truck convoy".

Particular attention was paid to ensuring the controllability of the MMS, "invulnerability from the air", the interaction of the constituent elements, the establishment of "continuous operation of the rear of the tank units on the move and the fastest return to service of the restored tanks", because "the speed of development of success depends on the speed of the work of the tank rear".

On the whole, a deep operation was viewed as a "tiered battle" requiring high operational art from the commander, the ability to quickly make decisions adequate to the changing situation and bring them to the troops.

"Step by step," instructed the head of the operational department of the Military Academy G.S. Isserson, - by regulating and directing actions from the depths, the modern army commander will have to continuously and effectively manage the course of events. Each refusal of his active participation in this management will mean a step towards operational chaos... The diverse data of the immediate situation, illuminating the operation in two dimensions - along the front and in depth, will require a high level of operational art and operational culture, so that, based on analysis, a combination and calculation of all data could come to the synthesis

reasoned decision. Thus, the modern commander will reappear on the "Pratzen Heights" and, surrounded by radio and television apparatuses, always having an aircraft at his disposal, will direct the operation of a deep breakthrough with a sign of the hand. A powerful headquarters - the organizer and technical executor of decisions - will be provided at its service. Another subordinate part of the headquarters will be located behind, directing and regulating the movements of parts of the deep operational formation. Finally, the third rear part of it will be located even further in depth, approximately on the line of railway basing, and will manage the entire complex mechanism for supplying and ensuring deep operation.

We can safely say that our theory was the most advanced, at least not worse than that of Guderian. True, it did not work out so smoothly in practice: the red commanders could not manage to master the provisions of their own charters, the red army - their own equipment.

### Chapter 3

The appearance in large numbers of our own models of armored vehicles made it possible to start creating new organizational structures of tank troops in the Red Army. In the summer of 1929, on the initiative of K.B. Kalinovsky, an experienced mechanized regiment was formed, which included a battalion of MS-T1 tanks, an armored division equipped with BA-27, a motorized rifle battalion and an air squadron. On the basis of this regiment, in May 1930, the 1st separate mechanized brigade of the Moscow Military District was deployed as part of a tank and mechanized regiment, reconnaissance and artillery battalions, as well as a number of special units. The brigade, whose commander-commissar was appointed N. Sudakov, was armed with 60 tanks, 32 tankettes, 17 armored vehicles, 264 vehicles and 12 tractors.

Very soon, the first serial tanks received a baptism of fire and the first experience of "interaction". In 1929, a Soviet-Chinese conflict broke out around the Chinese Eastern Railway, which was formally under joint management, but in fact was completely controlled by the Soviet side, which in the future sought to take control of the entire shaken area with the active participation of military advisers, "Red Chinese" and arms supplies. civil war in China. So, the assistant to the military attache V.A. Trifonov (who did not understand the politics of the party) wrote to the Politburo a year and a half before the events: "Our advisers have embarked on the path of creating a pro-Soviet government. To create a government in China with our own hands is adventurism... Our policy is such that clashes in Manchuria and on the Chinese Eastern Railway are inevitable. The Chinese people regard our activity in China and on the CER not as aid to the national liberation movement, but as imperialism." In July, the government of Chiang Kai-shek, having established control over the northern provinces of the country and parted ways with communist advisers without regret, changed the leadership of the road by force, "Soviet citizens - employees of the road - were subjected to all sorts of insults

and attacks by the police and were withdrawn."

But this is a trifle, a trifle. The peace-loving country of the "victorious proletariat" would, of course, find means to solve the problem amicably, by diplomatic means. But our leadership "became aware" that Chiang Kai-shek was up to no good: he, ignoring the "repeated protests of the government of the USSR", began to concentrate his troops near the border, planning to "deal a surprise strike, reach Baikal and cut the Trans-Siberian Railway, blowing up the tunnels"! And Chiang was advised by the imperialist powers, who wanted to "probe the power of the Red Army with the bayonets of the Chinese." Naturally, Moscow was forced to take appropriate measures.

On August 6, 1929, all military forces in the Far East were united into the Special Far Eastern Army under the command of V.K. Blucher. Vasily Konstantinovich was given the task of "give a proper rebuff to provocateurs and Chinese militarists", along the way establishing Soviet power in Manchuria. On August 18, the advance detachments of the EDF "with the greatest restraint, without going beyond the framework of necessary self-defense", invaded Manchuria and forced the enemy, armed with antediluvian fuzes and bombers, "to abandon their anti-Soviet strongholds in a panic." In November, at the final stage of the operation, a separate company of MS-1 tanks took part in the battles as part of the Trans-Baikal Group of Forces, frightening both enemies and their own.

Here is how Marshal V.I. Chuikov: "Our most offensive developed where the 36th Infantry Division was operating, supported by a company of MS-1 tanks. This fight was by far the most interesting. For the first time we could observe a tank offensive in cooperation with infantry. The company operated 10 vehicles. From their original positions, they moved after artillery preparation. The tanks were not introduced into the breach, they broke through the defenses, covering our infantry chains with themselves. Their attack was sudden for the Chinese soldiers, it surprised the Red Army soldiers to no lesser extent. I was at the observation post next to Blucher. We saw through binoculars how Chinese soldiers and officers, seeing our tanks, leaned out almost half a height from the trenches. We expected that they would run in a panic, but the surprise turned out to be so strong that it seemed to paralyze their will and even kill their fear.

The Red Army soldiers also behaved strangely. They also did not keep up with the tanks, and some, as if spellbound, looked at the moving steel turtles, spewing fire ... The tanks freely reached the Chinese positions and opened fire along the trenches. Machine-gun fire sobered up the Chinese. They ran in panic. Ten tanks broke through the enemy defenses without any losses on our part. If we had a better interaction between tanks and infantry, we could develop success with lightning speed. However, our units did not expect such an effect. The Red Army broke into the enemy's location and, instead of moving forward faster, lingered in the Chinese trenches. The tanks deepened 5 km towards Zhalaynor and stopped, fearing to move along the Chinese rear without infantry.

The poorly armed and poorly organized Kuomintang troops were utterly defeated, losing about 10,000 men killed and taken prisoner. But the revolution in Manchuria, despite the deployment of detachments of "rebel" saboteurs, did not work out. On December 29, 1929, a protocol was signed in Khabarovsk on the restoration of the former

provisions; Soviet troops returned to their territory. The irretrievable losses of the Red Army amounted to 281 people. According to historians from the Russian General Staff, "our sacrifices were not in vain": firstly, "historical justice was restored", and secondly, an opportunity presented itself to show the whole world "the inviolability of the borders of the Land of Soviets, the strength of the Red Army, the fighting spirit of its fighters and commanders." Five years later, the Chinese Eastern Railway was given to the Chinese almost for nothing.

In the autumn of 1932, the 11th Mechanized Corps was formed on the basis of the 11th Red Banner Rifle Division in the Leningrad Military District, and the 45th Mechanized Corps was formed on the basis of the 45th Volyn Red Banner Rifle Division in Ukraine. Each corps included a mechanized brigade with T-26 tanks (three tank battalions, a rifle-machine-gun battalion, an artillery division, a sapper battalion, an anti-aircraft machine-gun company), a brigade of the same composition, but armed with BT tanks, a rifle-machine-gun brigade, corps units: reconnaissance, chemical, engineer battalions, anti-aircraft artillery battalion, air squadron. In total, the mechanized corps had about 500 tanks, over 200 armored vehicles, 60 guns and other weapons.

At the same time, the formation of other armored units began. As a result, the number of personnel of the armored forces by January 1933 increased by 5.5 times compared to 1931, and their share in the army increased from 1.6 to 9.1%. The total number of armed forces reached 800 thousand people.

As of January 1, 1933, the Red Army had 2 mechanized corps, 5 mechanized brigades - 145 tanks each, 2 separate tank and 15 mechanized regiments, 15 separate tank battalions, 69 mechanized and tank battalions, armed with 4500 combat machines - T-18, T-26, T-27, B-T.

In 1934, two more mechanized corps were formed: the 7th in the Leningrad Military District to replace the 11th deployed to the Far East, and the 5th in the Moscow Military District. In February 1935, the mechanized corps switched to a new organization, consisting in

reducing the number of auxiliary parts to give the hull greater mobility and controllability; a communications battalion and a reconnaissance battalion on the T-37 were added. Mechanized units, as a rule, were armed with machines of the same type, and the brigades in the corps had BT tanks, and individual brigades and regiments in the infantry units had T-26s. Regiments and brigades that included T-28 and T-35 were called heavy. By 1935, the Red Army had 5, 7, 11, 45th mechanized corps, 2, 3, 4, 5, 6, 8, 13, 14, 19, 20, 21, 32, 133, 134th mechanized, 33, 50, 135th rifle and machine gun brigades.

The very first exercises showed that mechanical connections are bulky, difficult to control, and their material part constantly fails both due to insufficient reliability - engines broke down, caterpillar tracks were destroyed, and due to illiterate operation and a low level of technical training of personnel. What are the competitions in jumping over obstacles on high-speed tanks worth alone: what else will a 12-ton machine fit after a 20-40-meter flight with a "return to native land"? At the same time, in

spare parts were not supplied to the army at all: factories, fulfilling plans, counter and transverse obligations, feverishly assembled tanks, marking the beginning of a persistent tradition of the socialist economic system - tearing the navel, steadily increasing production, so that later, in the shortest possible time, having no spare parts, warehouses, systems basing, rotting it, no matter what, whether potatoes, an aircraft carrier or those countless tons of ammunition that are still in all latitudes - from the hills of the Arctic to the steppes of Ukraine - have been lying in the open for decades and take off into the air with depressing regularity.

"Everyone is trying to fulfill an order for a tank, tractor, car, plane, etc.," lamented Commissar K.E. Voroshilov. - For non-fulfillment of these orders, they warm (the People's Commissar speaks in the barracks jargon: "warm" means "punish"), which should also be filed by industry - this is the last thing. praised for doing it. And the spare parts

In the first half of 1933, industry supplied the army with 80 pieces (!) of spare tracks. The lack of spare parts brought to life a special order from the head of the UMM: "In order to save the motor resources of BT tanks, keep 50% of the vehicles in the troops in an emergency reserve, operate 25% by half of their capabilities and 25% - fully operate."

On February 15, 1935, the order of the People's Commissar of Defense No. 25 followed, according to which from 50 to 80% of the tanks in units were stored for conservation in order to save engine life. This is also very our way: to make mountains of weapons and not to give them into the hands of those who will have to go into battle with them. Firstly - saving "people's money": "You throw a grenade, but for the state it will cost a cow"; secondly, they will break something. Therefore, in the field exercises, most of the crews went to the "tank attack" on foot. If, nevertheless, tankers were allowed to the car, then they taught it to drive only in a straight line, to shoot from flat areas at fixed targets painted black for visibility. For ostentatious events and checks, separate units and the most intelligent drivers were trained and put them in tanks if there were exercises or "sudden" alarms.

There has never been regular combat training in the Red Army, at least not in peacetime. The army was always building something, harvesting, sowing and harvesting, assisting the national economy, acquiring its own pigsties, cowsheds and hayfields. The cost of combat training in the estimate of the People's Commissariat of Defense was 0.34-0.41%, almost two times less than for holding political and cultural events, because "the moral forces of the Red Army are a decisive means in organizing modern combat." Even less - 0.2-0.28% - was spent on military education.

In a word, the Red Army in the first half of the 1930s was a cross between a collective farm and a camp zone. The illiterate serfs, who had gone through the "school of collectivization", were called up for military service, they received tattered uniforms, called uniforms, a shovel or a pitchfork, and were engaged in the usual business from childhood. Viceroy in the Far East V.K. Blucher generally assigned a third of his army - 60 thousand people - to the Special Collective Farm Corps, called, according to the plan of the commander-chairman,

"to develop the richest virgin and fallow lands, to provide the population and the army with food." Instead of fighters, Vasily Konstantinovich had peizans - shepherds, cattlemen and mowers, by the way, they don't need to be taught anything. The "kolkhoz army men" were often kept in the most bestial conditions. New military units grew like mushrooms and literally out of the blue: the echelon with people was emptied at some half-station, it's good if in the taiga - you can harvest firewood and building materials, and received an order: "Settle down". Entire regiments and brigades, from Leningrad to the steppes of Transbaikalia, were housed in tents, dugouts and "fox holes" in summer and winter.

"I had to accept the regiment," recalls General I.M. Chistyakov (275th Regiment of the 92nd Infantry Division) - to build temporary housing, a canteen and stables on a bare spot. The Red Army soldiers dug dugouts, put up sheds. They dragged stones, made a barracks for five hundred people ... Our food was not very good, but the fish saved a lot. Question: How does this military unit differ from a special settlement? Just the fact that they protect themselves?

With the coming to power of Hitler, the Wehrmacht also developed quite rapidly, but they definitely did not have "gopher" tankers, as in any civilized country.

The level of general education of the "red commanders" was extremely low. So, in 1929, 81.6% of the cadets admitted to the military schools of the ground forces had only a primary education or had none - but everything was exclusively "of proletarian origin." In January 1932, 79.1% of cadets had primary education, in January 1936 - 68.5%, and in armored schools - 85%. It was, in principle, impossible to make them commanders who knew their business with good general development and a broad outlook.

Here is a portrait of a cadet of the United Belarusian Military School "model of 1932": "Weak combat bearing is striking," the uniform "was not washed almost all summer" and "reached the color of oil." Seeing the commander with rhombuses in his buttonholes, "the orderly cadets hesitated, one scratched his cheek and turned his head, not knowing what to do: stand up or sit down."



But even such "specialists" were not enough. At the beginning of 1935, 37-39% of the commanders had no military education at all. Due to the lack of commanders, lieutenant "kubari" were massively assigned to junior command staff, sometimes simply illiterate. In the Kharkov Military District, almost all platoon commanders and three-quarters of company commanders were such nominees. In the "Blyukher province" in the autumn of 1936 there were "whole groups of lieutenants and senior lieutenants" who had no idea what percentage of 200 would be 6, and staff officers who did not know simple fractions. I wonder if any of them read the pride of Soviet military thought - "Temporary instructions for organizing a deep battle"? Was the marshal himself capable of organizing a "deep, multi-act, multi-tiered battle"? (Come on, let's try to imagine the commander Blucher on the "Pratzen Heights", surrounded by "radio and television devices" and a "powerful headquarters" with a "subordinated part", synthesizing "reasonable decisions".)

Graduates of military schools, in which, as unnecessary and due to indigestibility, subjects that were considered necessary and obligatory in the tsarist army were thrown out of the program, did not know how to

read a map, use a compass, did not acquire commanding skills, did not master the methodological methods of working with junior commanders, and they, in turn, could not command a squad, gun or tank, sometimes just give the right command. The institute of sergeants (non-commissioned officers), who were engaged in the individual training of fighters, in the Red Army was ruined immediately, reliably and forever, no matter how they tried to revive it.

Tanned warrior S.M. Budyonny, a combat non-commissioned officer of the old school, noted: "We sometimes hover on a very large operational-strategic scale, and what will we operate with if the company is not good, the platoon is not good, the squad is not good."

One of the drummers of Dalstroy formulated "three commandments that a person in the camp needs to know - mat, blat and bullshit."

Exactly. Cursing, drunkenness, lack of discipline, elementary gouging and eyewash flourished in the Red Army: "... the scourge of the Red Army on the eve of 1937 was the low demands of commanders of all degrees and the numerous simplifications and conventions caused by it in the combat training of troops. The fighters were allowed not to disguise themselves at the firing line, not to dig in when the offensive was delayed; machine gunners were not required to independently choose a position for a machine gun before firing, a signalman was not trained in running and crawling with a telephone set and a communication coil behind his back ... In the 52nd Artillery Regiment of the BVO in December 1936, even the device of a rifle was studied without the rifle itself, training phone to the exit in the field - without the phone itself ... The junior commander of the Red Army also looked unsightly. Untight, unshaven, often in a torn tunic, or even without insignia, he, in principle, could not be demanding, could not work out with the fighters all the details of their training. One could quarrel with such a commander, one could call him a "bald" and use foul language ... Direct fraud also flourished, when the facts of accidents were hidden, the shooting results were "rounded off" and inflated, and the soldiers who were completely incapable of shooting were announced in the reports as Stakhanovists.

"If events break out in the Far East," V.K. swore from the podium.

Blucher, - then a special Far Eastern Red Army, from a Red Army soldier to a commander, as selflessly devoted soldiers of the revolution, under the direct leadership of the beloved leader of the Workers 'and Peasants' Red Army and fleet - Comrade Voroshilov, the Central Committee of the Party, the great leader of our party, Comrade Stalin, will answer such a blow from which the foundations of capitalism will crack, and in some places even collapse!

And this is clear to any "Transbaikalian Komsomol member": "You can't do without bullshit - then your grub will be more significant."

The provisions of the theory of a deep operation were tested at the maneuvers of the Kiev military district in 1935 (75 thousand people, 800 tanks, 500 aircraft participated), Belorussian (85 thousand people, 1136 tanks, 638 aircraft), Moscow, Odessa and other districts in 1936. During the exercises, which brought together the most prominent Soviet commanders and foreign military delegations, they practiced: breaking through a fortified defensive line with infantry reinforced by tank battalions and artillery of the RGK, introducing a success development group into the breakthrough, maneuvering a mechanized corps and cavalry in order to encircle and destroy the enemy, actions of attack aircraft in combat

orders, the use of airborne assault forces. "The maneuvers convincingly proved the enormous crushing power and exceptional maneuverability of mechanized and tank formations," as well as "the high combat power of the Red Army, the good training of the Red Army men and the skills of the commanders," the troops of the "districts passed the maturity test with honor." The events ended with speeches, parades and banquets.

The true results were summed up in a narrow circle. The squadrons of bombers and attack aircraft, which were supposed to clear the way for the advancing tanks, essentially failed to do this. Their interaction with mechanized formations "failed", "was completely lost" or "carried out sporadically", due to the inability to organize a stable connection. The tankers of Yakir and Uborevich advanced blindly, since intelligence, according to the head of the Combat Training Department, Commander of the 2nd Rank A.I. Sedyakina, "was incompetent." As a result, the 15th and 17th brigades of the KVO repeatedly struck "on an empty place", the 5th and 21st mechanized brigades could not detect enemy ambushes. In the BVO, the vehicles of the 1st Tank Brigade "suddenly" found themselves in front of a strip of tank traps and gouges and were forced to turn sharply to the side - into the swamp, where they got stuck. Tank commanders did not know how to conduct observation in battle, driver mechanics did not know how to maintain a given direction, as a result of which the combat formations of the attacking units "quickly got upset." The commanders of platoons, companies and battalions did not master radio communications, did not know how to manage their units. "The issue of the interaction of artillery with infantry and tanks" turned out to be unattainable "aerobatics" even in training conditions.

All interaction and control on the battlefield consisted in a loud command "Forward!", Repeated "by everyone: from the battalion commander to the squad leader."

According to the results of the MVO exercises, Marshal M.N. Tukhachevsky noted that neither the training of the troops, nor the work of the headquarters, nor the interaction of the troops were at the proper height: "The mechanized corps broke through the enemy's defensive lines from the front without artillery support. losses should have been

huge ... The actions of the mechanized corps are sluggish, the management is poor ... The actions of the mechanized corps were not supported by aviation ... Aviation did not work purposefully enough ... Communications did not work well ... The work of headquarters, in particular intelligence, is very weak in all parts. The French military attaché assessed our maneuvers as staged for propaganda purposes and full of tactical errors show.

"Somewhat later," reports Marshal M.V. Zakharov, - theoretical and practical conclusions were drawn from the actions of the troops during the maneuvers, which played a big role in the subsequent development of our armed forces.

strength."

Yes, quite practical conclusions followed: two years later, almost no one was left alive from those who led the armies of the "Eastern" and "Western", "Red" and "Blue" in Polesie and near Shepetovka and watched the amusing battles from the stands.

In 1937, the third five-year plan for the development of the Red Army for 1938-1942 was adopted. They provided:

- 1) maintaining the existing number of mechanized formations - 4 corps, 21 brigades, 3 separate motorized armored brigades;
- 2) the creation instead of training brigades - eleven training regiments;
- 3) transition to reinforced tank platoons with five vehicles instead of the previous three;
- 4) transfer mechanized brigades to a new organization: four tank battalions of 54 linear and 6 artillery tanks each, reconnaissance and motorized rifle battalions, support units;
- 5) to establish the staff strength: in a light tank brigade - 278 BT tanks, in a tank brigade - 267 T-26 tanks, in a heavy brigade - 183 (136 T-28, 37 BT, 10 chemical), in a tank regiment - from 190 to 267 combat vehicles;
- 6) introduce a two-company tank battalion (T-26 and T-38) into each rifle division, and a tank battalion into the cavalry division regiment.

In April 1938, all mechanized corps, brigades, regiments were renamed into tank ones.

In the Far East, there were every opportunity to solve a specific problem instead of hovering "on an operational-strategic scale". Here, after the occupation of Northeast China by the Japanese troops, the Soviet-Japanese border conflict gradually flared up, especially since there had never been a border as such. "Samurai", incited by "the ruling circles of the United States, England and France and supported by fascist Germany" - they themselves would never have thought of such a thing - planned to seize Soviet Primorye and northern Sakhalin. Comrade Stalin had views of Chinese territory. Almost immediately skirmishes, provocations, scandals began with the exposure of spies and saboteurs, who were actively thrown to each other by both sides. On the Soviet side, as a rule, border guards took part in the incidents, and I must say that the NKVD knew how

to train real fighters, but if "collective farm soldiers" got involved in the case ... For example, on February 1, 1936, at the Xianghe outpost, two companies of the Japanese collided with two companies of the 78th Kazan regiment of the 26th Stalinist division. The battle did not take place, they dispersed almost peacefully, but just in case, the Soviet command decided to send a tank platoon of "twenty-sixth" from the 2nd mechanized brigade to help the infantry. However, the "best cars" (which were stored for conservation for the sake of "saving resources") turned out to be out of order, and the "best drivers" did not know these - not assigned to them - tanks. Running around, turmoil began, everyone was engaged in winding up the cars, and as a result, this process took four hours. On the way, all the T-26s broke down one by one, and the repair kit that accompanied them did not have the necessary spare parts and tools. The technical staff turned out to be technically unprepared and could not cope with the repair. Then the fuel ran out - and there were no tankers with the platoon ... In general, the platoon covered 150 kilometers in 56 hours, out of six tanks only four reached their destination. But even on them "weapons were poorly prepared" (?).

In the summer of 1938, events broke out in the region of Lake Khasan, where the borders of the USSR, Korea and Manchuria converged.

It all started with the fact that on July 8, a detachment of the Posietsky border detachment climbed onto the crest of the Zaozernaya height that dominated the surrounding area - from there it was more convenient for them to observe. By July 11, about 40 fighters with easel and manual

machine guns, busily equipping a position on Manchurian territory with trenches and a wire stretched close to the ground ("spotykach"). According to the testimony of the former head of the Podgornaya frontier post, P.F. Tereshkina, "on the slopes of the hills, they set up rock dumps and laid several land mines - "surprises". Two weeks later, the "garrison" consisted of 70 personnel of two outposts. Starting this action, the Soviet command was well aware that "the capture of a height could cause a desire on the part of the Japanese to seize this height themselves," and additionally sent a company of the 119th regiment of the 40th rifle division to the area of Lake Khasan.

On July 15, Japanese gendarmes appeared and politely demanded that the violators leave (according to another version, they tried to fix the fact of "building fortifications" on the photographic film). The border guards did not succumb to the provocation and, for complete clarity, shot one of the gendarmes. Everything - strictly according to the charter: "Stop! Back! I will shoot!", a warning shot and fire on the "violators". In any case, commander G.M. Stern, at a meeting of the Military Council at the NPO, told this story in this way: "On July 15, two Japanese soldiers and three civilians went to the heights and took several dozen steps across our territory. Sapper Vinevitin, noticing this, fired from a distance of 120 meters and killed one Japanese gendarme and wounded one. After that, a wave of impudent statements began at our address ... "No, it seems that there was no warning, there was immediately a control one. From a message from an employee of the Central Border Museum of the FSB of the Russian Federation M.A. Gundryrina: "The imperious call "Stop!" turned out to be so overwhelming for them that, without a second's hesitation, they rushed headlong to their heels. Vinevitin took aim and fired. One of the intruders fell with a bullet through the skull."

On the same day, the Japanese Charge d'Affaires of Japan in Moscow impudently showed up at the People's Commissariat for Foreign Affairs with a "far-fetched

claims," they say, they kill our citizens in the territory we honestly occupied; kindly clean up. Mr. Nishi most emphatically demanded the immediate withdrawal of the Soviet troops and hinted at possible complications. July 20 to the People's Commissar M.M. Ambassador Mamoru Shigemitsu addressed Litvinov with the same question. In both cases, Japanese diplomats received a worthy rebuff without any politeness: they were advised to be careful and showed a map that irrefutably testifies that "the heights of Zaozernaya and Bezmyannaya are on Russian territory." Both sides referred to the same document - the Hunchun Accords, signed by the governments of Russia and China in 1886 - but interpreted them differently. So, the Japanese unambiguously deciphered the wording "the border goes along the western side of Lake Khasan" - along the western shore; our experts concluded that "not only the western shores of this lake, but also a certain area to the west of these shores belongs to the Soviet Union." The funny thing is that on the Soviet map published by the Department of Military Topography of the Red Army in 1933, the border was generally marked along the eastern bank of Khasan.

The leaders of the People's Commissariat of Foreign Affairs behaved with inimitable aplomb, they did not show the slightest interest in a peaceful resolution of the conflict, they dismissed proposals to remove troops from the height of Changgufen (Zaozernaya) and calmly deal with the configuration of the border and blamed

counter-protest to opponents about the invasion of Japanese gendarmes into Soviet territory. Relations between the two countries, whose geopolitical ambitions clashed in China, have been chilly to say the least. The arguments of comrades Litvinov and Stomonyakov are impenetrable: "The whole world knows that the Soviet government is striving for peace and that the only instigator of conflicts in the Far East is the Japanese-Manchu authorities." A disciplined and self-possessed Soviet border guard is so arranged that he is physically unable to cross the state border; if there is a Soviet border guard somewhere, then there is Soviet land there, and the Japanese gendarmes have nothing to do on it.

There was an opportunity to reach an agreement. There was no desire. Therefore, a consensus could not be reached. Tokyo reserved the right to "use force in order to force the Soviet troops to evacuate from the territory they illegally occupied." Moscow was not at all afraid.

The Japanese command began preparations for the operation "to oust the Soviet troops." People's Commissar K.E. Voroshilov on July 22 ordered Marshal V.K. Blucher to put a number of formations and aviation of the Far Eastern Front on high alert. However, Vasily Konstantinovich, instead of showing commendable zeal and getting ready to "really fight the Japanese", started an amateur investigation and found that even according to Moscow maps, Soviet border guards "crossed the line", which, in fact, provoked a conflict with the neighboring side. In fact, Blucher maliciously sabotaged Comrade Stalin's instructions to give the "Japanese militarists" who intended to test the strength of our borders, and to demonstrate to the whole world the steadily growing power of the Red Army, despite the many wormed enemies.

The Japanese generals were also eager to fight. Both sides preferred a forceful solution to the problem, deciding to play a small border game.

war games with educational purposes - a kind of reconnaissance in combat on a "test site" with an area of 300 hectares. Thus, the plan of the operational department of the imperial General Staff provided: "To carry out battles, but at the same time not to expand beyond the necessity the scale of military operations. Exclude the use of aviation. Allocate one division from the Korean Army for the operation. Having captured the heights, take no further action.

(To the great disappointment of the "Chinese comrades" who suggested that Moscow take advantage of the "unique historical moment" to unleash a full-scale war:

"a) Japan was exhausted by the year of the war with China, this year showed all the weakness of Japan, therefore, the combined forces of the USSR and China will easily crush the military power of Japan, especially since the Japanese navy cannot be effectively used in the war against the USSR, as well as against China, and the air fleet cannot pose a real threat against the first-class air fleet of the Soviet Union; in the field of human contingents, China has inexhaustible possibilities; ... the international situation is now exceptionally favorable for resolving the issue by means of war, and this situation cannot be missed; e) before the present war, the Soviet Union did not have enough

a valid reason to start a war against Japan, as this would be contrary to his peace policy; now, since Japan was the first to start aggressive actions, she will in no way be able to accuse the USSR of aggression ...").

According to the latest Soviet data, the Japanese concentrated in the conflict area the 19th Infantry Division, numbering about 10 thousand people, which our military for some reason called "Guards", a brigade of the 20th Infantry Division, a cavalry regiment, three separate machine gun battalions and tanks. A battalion of heavy artillery and anti-aircraft guns were brought here. Gun positions were located on the western bank of the Tumen-Ula River, and up to 70 combat aircraft were concentrated at the nearest airfields. A detachment of Japanese ships advanced to support the ground forces at the mouth of the river. We note right away that the Japanese did not use tanks, aircraft, or fleets.

Marshal Blucher ordered the 40th Ordzhonikidze Rifle Division of the 1st Red Banner Army to be alerted and allocated two reinforced rifle battalions to help the border guards.

On the evening of July 29, a company of Japanese soldiers, having knocked out a Soviet border detachment - a lieutenant and four NKVD soldiers were killed during the clash - occupied the Bezmyannaya height, located two kilometers north of Zaozernaya. The reserve group of the border detachment and the rifle company that arrived in time forced them to retreat without accepting the battle. Parts of the regular Japanese army entered the business. At dawn on July 31, two battalions of the 75th Infantry Regiment of the 19th Division, with artillery support, attacked and captured Zaozernaya, then Bezmyannaya, pushing the Soviet units 4 kilometers northeast of Lake Khasan. After that, the Japanese retreated and began to gain a foothold on the heights. Units of the 75th Infantry Regiment took up defensive positions on the heights of Zaozernaya and Bogomolnaya, on the left - on the Bezmyannaya and Chernaya hills, units of the 76th Infantry Regiment were located.

Counterattack of the 40th Infantry Division of Colonel V.K. Bazarov, undertaken on August 2 and supported by the 32nd and 40th separate tank battalions, was repulsed by the Japanese with heavy losses for her. The division, having made a 200-kilometer march, having lost almost all the artillery along the way, attacked the enemy on the move, fragmented, without reconnaissance and any battle plan - with a wave of the hand and a "loud command" Forward! ". No one expected serious resistance from the "macaques", and a surprise came out: "The enemy turned out to be more cunning than we naively expected", the enemy dug in well at the command heights, the enemy opened fire, "as soon as we showed ourselves."

As the former Red Army soldier of the 120th Infantry Regiment S. Sharonov recalls: "Our division attacked from the south in the direction of the hills of Machine Gun and Zaozernaya in a narrow corridor (in some places its width did not exceed 200 meters) between the lake and the border. The big difficulty was that it was strictly forbidden to shoot across the border and cross it. The density in this corridor was terrible, the soldiers went rampart after rampart. A lot went down there. From our company, for example, 177 people remained alive.

Battalion commander Storozhenko says the same thing: "In front of us lay a space of 150 meters, completely braided with wire and under crossfire. In the same position were our units advancing through the northern ledge to Bezymyannaya. We

could deal with the enemy much faster if they violated the border and took possession of the trenches, bypassing them through Manchurian territory. But our units exactly followed the order of the command and acted within their territory.

Tankers, not knowing the terrain, bogged down in swamps and ditches. Having lost about 800 people killed and wounded, the Soviet units retreated east of Lake Khasan. Satisfied with the result, the Japanese side proposed to settle the matter peacefully and, for a start, to withdraw the troops to their original positions that had taken place before July 11.

However, "the impudent provocation of the Japanese military at the lake" could not go unpunished; the indignant Soviet people organized rallies and unanimously demanded that the government "give a resolute rebuff to the warmongers, cleanse the Soviet land of the Japanese-Manchurian bastards." Tokyo's proposals were indignantly rejected, TASS circulated the answer of the People's Commissar for Foreign Affairs M.M. Litvinov:

"The Soviet peoples will not put up with the presence of foreign troops even on a piece of Soviet land and will not stop at any sacrifice in order to liberate it." It is quite natural that, as soon as it came to serious matters, the propaganda slogan "little bloodshed" was instantly replaced by the iron Bolshevik principle: "Victory at any cost."

THE DESTRUCTION OF THE JAPANESE MILITARISTS AT LAKE HASAN July 29-Pav

[= s g s. And. No. 114.3. ° . re: = —

Combat operations near Lake Khasan on June 29 - August 11, 1939. For three days, units of the 39th rifle corps of brigade commander V.N. Sergeyev, which included the 32nd, 39th, 40th rifle divisions, the 2nd mechanized brigade (114 BT tanks), the 121st cavalry regiment and reinforcement units. The corps had 32,000 men, 609 guns and 345 tanks. The actions of the ground forces were supported by 250 aircraft. The directive of the People's Commissar of Defense ordered the command of the corps to move to decisive

actions and restore the state border. Commander G.M., chief of staff of the front, arrived at the scene of events. Stern with a group of commanders and the head of the Main Political Directorate, army commissar 1st rank L.Z. Mehlis with a group of political workers and military lawyers. August 4 K.E. Voroshilov ordered, keeping secrecy, to bring the troops of the Far Eastern Front and the Trans-Baikal Military District, the air force and fortified areas into full combat readiness, so that at any moment, on special instructions, "deal a powerful blow to the burrowing impudent Japanese aggressors." Similar tasks were given to the commanders of the Pacific Fleet and the Amur military flotilla.

August 5 G.M. Stern issued a combat order to the 39th Rifle Corps: to launch a general offensive and, with simultaneous strikes from the north and south, pinch and destroy "enemies who dared to invade our sacred land" in the zone between the Tumen-Ula River and Lake Khasan. The disposition is as follows: 32nd Saratov Rifle Division, Colonel N.E. Berzarin with the tank battalion of Major M.V. Alimov and the 3rd tank battalion of the 2nd mechanized brigade were to deliver the main blow from the north and capture the Bezmyannaya hill, and then throw the enemy off the Zaozernaya hill. The 40th rifle division with the 2nd tank battalion, the reconnaissance battalion of the 2nd mechanized brigade and the 40th tank battalion delivers an auxiliary strike from the southeast in the direction of the Machine Gun Hill, and then to Zaozernaya. The 39th Rifle Division with the 120th Cavalry Regiment, a motorized rifle battalion and the 1st Tank Battalion of the 2nd Mechanized Brigade advanced to secure the right flank of the corps. The corps commander left 63 "batushki" in reserve. In total, 285 combat vehicles of the BT-5, BT-7, T-26, and KhT-26 types were concentrated in the combat area.

The commanders of the rifle divisions decided to use the tank battalions attached to them as divisional groups of direct infantry support, setting them the task of supporting the attack of the first-echelon regiments operating in the directions of the main attacks.

The operation included artillery preparation by three regiments of corps artillery, as well as support and cover for ground troops by aviation. Infantry and tanks were also forbidden to cross the state border this time. Thus, Stern's "original and bold plan" was exactly repeated, only by much larger forces.

The start of the operation was scheduled for 2 p.m. on August 6. The plan for the upcoming battle was personally approved by the People's Commissar, who allowed, for the good of the cause, to invade the adjacent territory and bombard Japanese artillery positions on the right bank of the Tumen-Ula River. The map clearly shows that the approaching flanks of the 39th Rifle Corps - the 95th and 119th Rifle Regiments - were aimed at the Chernaya height,



Eagle height and the Korean village of Homoku.

Tank units at this time were preparing for battle. They used the night to move to their starting positions, reconnaissance of terrain unsuitable for the use of tanks, and laying gates through the swamps. However, like everyone else, the tank commanders did not have any information about the forces, the fire system, the features of the enemy's defense, they were assigned specific combat missions only in the morning.

It was not possible to organize radio communication with the infantry, since the rifle regiments did not have radio stations.

Because of the dense fog, which interfered with the actions of aviation, the offensive was delayed for three hours. In view of the fact that the concentration of troops took place in full view of the enemy, there could be no talk of any surprise.

At 4 p.m., TB-3 heavy bombers, under the cover of fighters, attacked Japanese positions. More than 250 guns began artillery preparation. Under her cover, the infantry and tanks took up their starting position and at 177 hours went on the attack. The advance to the front line of the 3rd tank battalion of the 2nd mechanized brigade, which supported the rifle regiments of the 32nd division, was carried out in three columns, according to the number of crossings made by sappers across the stream southwest of Novoselka. Because of the swampy ground in the floodplain of the stream, the tanks moved at a speed of no more than 3 km / h, being subjected to heavy shelling from the enemy.

The effectiveness of artillery and aviation training was low. The Red Army soldiers with difficulty overcame the swampy terrain under heavy enemy fire. Of the 43 tanks of the 3rd Battalion, only ten reached the front line of the enemy's defenses. The rest got stuck at the crossings or were hit by anti-tank guns. No better were the successes of the 32nd separate tank battalion:

"There was incredible heat in the tank, there was nothing to breathe," recalls Colonel General D.A. Dragunsky, who commanded the 3rd tank company, - shell casings burned his hands. Through the scope, all I could see was a bright blue sky. And suddenly something exploded in the car. Small fragments of needles dug into the cheeks and nose. Smoke and mud clouded my eyes. The tank turned to the left, began to roll back down. I grabbed the driver by the shoulder, shouted: "Stop!" In vain! The uncontrolled car rushed down and, burrowing up the tower into the swamp, froze in a dead cramp ... Two Japanese shells hit the tank - the first driver was torn off his leg, the second hit his head. The gearbox has failed. In the starboard side of our T-26, two round ragged holes gaped.

Ignorance of the situation, inability to navigate in it, lack of communications, artillery support, poor training of personnel who were not trained to drive "in difficult conditions with closed hatches" and use optical instruments, turned the attack into a chaotic movement of a mass of tanks, which was not controlled by anyone in battle. Having lost most of the vehicles, the tankers were unable to ensure the advancement of rifle units. An attempt to master the Nameless Height failed. With the onset of darkness, the tank battalions were withdrawn, the infantry clung to the southern slope. Units of the 95th Infantry Regiment by 21 o'clock reached the wire barriers of the height

Black, but strong fire were repulsed.

On the left flank of the corps, a tank company of the reconnaissance battalion of the 2nd mechanized brigade operated, attacking the enemy with nineteen BT-5 and BT-7 tanks. The company at high speed reached a swampy hollow between the heights of Machine Gun Gorka and Zaozernaya,

where it got stuck. Only two cars managed to overcome the swamp and break through to Zaozernaya. The 2nd tank battalion, having reached the front line of the Japanese defense,

also at first quickly moved forward, dragging along the infantry of the 40th Infantry Division. However, by 17.30 half of the tanks got stuck on the outskirts of Machine-gun Hill. Many vehicles were hit by anti-tank guns or burned by Japanese "anti-tank teams". The tanks of the commander, commissar and chief of staff of the battalion, as well as the tanks of two company commanders, which stood out from the general mass with their handrail antennas, were among the first to fail. The control of the battalion was broken, the surviving vehicles stopped and began to fire from a place. The battalion commander, Major Menshov, sent part of the tanks to the Machine Gun Hill with the task of destroying the firing points that impeded the advance of the 120th Infantry Regiment, and 12 vehicles, together with the infantry of the 118th and 119th regiments, attacked the Zaozernaya height.

The tanks that attacked the Machine Gun Hill were unable to overcome its steep rocky slopes. Zaozernaya's attack was more successful - seven tanks reached its southeastern slopes, and at 22 o'clock the soldiers of the 118th regiment hoisted a red banner on the southern part of the ridge of the height. The northern part of the Zaozernaya ridge, the heights of Bezmyannaya, Chernaya, Machine-gun remained in the hands of the enemy, who, despite the opposition of Soviet aviation, managed to transfer units of the 73rd and 74th Infantry Regiments to the left bank. The Soviet grouping was reinforced by the 115th Infantry Regiment 39 The fierce battles for two hills in the coastal steppe were in full swing until August 9, it was not possible to dislodge the enemy from them, although our media trumpeted that "Soviet territory was completely cleared of the invaders."

On August 10, the Japanese government again offered the USSR government to return to negotiations. On August 11, 1938, the fighting was stopped, the troops were withdrawn, the crest of the Zaozernaya hill remained in the neutral zone, as it was before the start of the "provocation". So, understand, did we abandon the "originally Russian territory" or did they knock us out of the "originally Manchurian"? The demarcation of the border in this area was carried out only in 1997, the disputed 300 hectares were divided approximately in half with China.

Soviet losses, according to official figures published only in 1993, amounted to 960 people killed, missing, dead from wounds and 2752 wounded; Japanese respectively - 525 and 913.

According to the same official data, the total losses in the tank troops are 75 people, although archival reports for the 2nd mechanized brigade alone give a figure of 106 fighters and commanders who "got out of action" killed and wounded - 30% of those "participated in a tank attack". According to I.M. Nagaev, the number of irretrievable losses of the Red Army is at least 1112 people.

It was announced to the whole world that "a severe lesson has been taught to the aggressor. He had to make sure that the Soviet borders were impregnable ... The test of the strength of the Japanese military, who decided to test the firmness of the Soviet Far Eastern borders near Lake Khasan, ended in a shameful failure. Twenty-six combatants received the title of Hero of the Soviet Union, the 40th Infantry Division was awarded the Order of Lenin, the 32nd - the Order of the Red Banner. Fled from us shamefully For the cordon the defeated enemy, On the heights of Zaozernaya

Proudly flying the red flag.

The results were summed up by the order of K.E. Voroshilov No. 0040 dated September 4, 1938, which stated that "the combat training of troops, headquarters and command and control staff turned out to be unacceptably low

level." The troops marched to the border completely unprepared, the Soviet units were "torn apart and incapacitated", their supply was not organized: "The heads of the front departments and the commanders of the units did not know what, where and in what condition weapons, ammunition and other combat equipment were available. In many cases, entire artillery batteries ended up at the front without shells, spare barrels for machine guns were not fitted in advance, rifles were issued unshot, and many fighters and even one of the rifle units of the 32nd division arrived at the front without rifles and gas masks at all. In addition, despite "huge stocks of clothing, many fighters were sent into battle in completely worn out shoes, half-bare, in such torn uniforms that, in fact, they remained in their underwear." All branches of the military showed a complete inability to act in a real combat situation. The gunners did not know where to shoot. Tank units "with the name of the leader of the peoples comrade. Stalin" fought heroically, but were used ineptly, they acted in large groups in a limited space and inappropriate terrain, without interaction with infantry and artillery, they could not break through the enemy defenses and suffered heavy losses in materiel. So, in the 2nd mechanized brigade, 49 combat vehicles (43%) were hit, eight of them burned down; another 44 tanks got stuck in swamps and ravines. In separate tank battalions, 85 T-26 tanks were out of order. Experts reported that in this particular situation "it would be more expedient to use tanks to attack only by individual units up to a platoon in close cooperation with the infantry, and use the rest of the tanks as mobile batteries, using fire from a place using terrain folds and receiving target designation from the infantry."

With regards to the design of the tanks, first of all, the combat commanders proposed to remove the handrail antennas that unmask the command vehicles; strengthen armor by installing armor plates

at rational angles of inclination; reduce the specific pressure on the ground "by widening the caterpillar"; redesign the ventilation system so that the tower is also ventilated, and does not represent a place of "strong accumulation of gases" and high temperature; provide the crew with intercom and additional viewing slots. There were no complaints about the motor part. It became necessary to supplement the tank units with caterpillar self-propelled artillery, since the SU-1-12 vehicle gun mounts, due to their low cross-country ability, could not accompany the attack.

Foreign observers noted "the weakness of Russian tactics, the lack of initiative, the lack of organization and communication between the various branches of the armed forces. One of the reports of the French Ministry of War reported on the clear superiority of the Soviet side in military equipment, on its complete air supremacy, but at the same time on the incompetence of the command staff: "Artillery fired, guided by maps,

and was unable to provide the infantry with the necessary support. And most importantly,

massive tank attacks were unprepared and were not supported. Soviet artillery and tanks, despite their

superiority, failed to coordinate their actions during tank attacks and curb the Japanese anti-tank equipment at the right time. Ultimately, the above failures of the Soviet troops are due to inept command.

So Stalin also learned a lesson, realizing that the "historical moment" had not yet arrived, the Red Army was not capable of conducting large-scale operations. A similar conclusion was reached with great satisfaction by the Imperial General Staff, which was preparing an offensive against Wuhan and was afraid of the USSR's intervention in the Sino-Japanese war. The former chief of operations, Colonel Masazumi Inada, later admitted: "We proceeded from the fact that, even if an entire division is destroyed, it is necessary to find out the readiness of the Soviets to oppose Japan." It can be said that the "samurai" were quite satisfied with the results of the Changgufen Incident.

Marshal Blucher was removed from command of the Far Eastern Front, and the front itself was disbanded into two separate armies. There was no mention in the order that immediately before the start of the fighting, in

during the battles and at the end of them, arrests of brigade commanders and battalion commanders were made - the security officers worked according to their own plan, they were engaged in the liquidation of the "military conspiracy", one of the defendants of which was the commander of the 15th cavalry division K.K. Rokossovsky. Immediately after the first attack on Zaozernaya, G.M. personally took command of the 39th Rifle Corps. Stern. Subsequently, the commander of the 1st Red Banner Army K.P. was removed from office and arrested. Podlas and Chief of Staff of the Army A.P. Assistants. Colonel S.K. became the commander of the 40th Infantry Division. Mamontov, and the 40th tank battalion was led into battle by Senior Lieutenant Sitnikov. Colonel A.P. Panfilov took over the 2nd mechanized brigade two weeks

before the start of the conflict; its two previous commanders -

Colonels I.D. Vasiliev and V.G. Burkov, the chief of staff, the military commissar, the head of the political department, the chiefs of services, the battalion commanders, and a number of other commanders were already settling in on the bunk. The command structure of the brigade was updated by 99%. Panfilov led the formation for 11 days, then they took him. As a result, the 45-kilometer march of the tank brigade to the combat area lasted 11 hours. The events of 1937-1938 took place against the backdrop of arrests and shooting of commanders and political workers with "wrong skulls", including in the armored forces. The commander of the 45th Mechanized Corps, Divisional Commander A.N. Borisenko and the commander of the 11th mechanized corps division commander Ya.L. Davidovsky, commander of the 7th mechanized corps division commander M.M. Bakshi, commander of the 133rd mechanized brigade brigade commander Ya.K.

Evdokimov, another former commander of the 11th mechanized corps commander K.A. died in the Chita prison. Chaikovsky. Here is an incomplete list of arrested commanders of mechanized brigades: Colonel A.B. Slutsky (6th MCB), Divisional Commander D.A. Schmidt (8th Mkhbr), Colonel S.I. Bogdanov (9th MCB), brigade commander M.Ya. Kolesnichenko (12th MCB), brigade commander G.F. Malyshev (13th MCB), brigade commander N.S. Polyakov (14th Mkhbr), Colonel V.P. Stolnik (also the 14th, and the brigade commander S.I. Kondratyev, who replaced him, shot himself), Colonel S.N. Ammosov (16th MCB), brigade commander V.G. Grachev (18th Mkhbr), colonels A.A. Vaganov, B.M. Simonov, M.B. Zalkind (all three are commanders of the 19th Mkhbr), brigade commander N.I. Zhivin (22nd MCB), brigade commander M.I. Bolotov (25th Mkhbr),

colonel I.P. Korchagin (31st Mkhbr). Of course, they took them under their white hands

deputies, assistants, chiefs of staff, political departments and others,

other, other. Only in the 7th mechanized corps, 75 commanders and political workers were arrested.

For the sake of truth, we note that not everyone was shot, someone was given a term, someone was simply fired from the army. For example, S.I. Bogdanov, the future Marshal of the Armored Troops, after a year and a half of interrogations and face-to-face confrontations, was thrown out into the street; during this time, his wife publicly disowned the "enemy of the people".

They didn't forget, they put Colonel N.F., the former head of the Soviet-German "Osoaviakhim Technical Courses", against the wall. Eroshenko, who grew up as the head of the armored forces of the Ural

military district, as well as all school employees "recruited by the Germans", up to plumbers, waitresses and janitors. For four years, about 100 Reichswehr officers and at least 65 Soviet cadets were trained on the Kama: combat commanders, teachers of armored universities, tank engineers, signalmen, and optics specialists. It is interesting that almost all Germans are known by name, among them future teachers, commanders of tank divisions, commander of the armies and the army group, Colonel-General Josef Harpe. We do not have a list of "the Russian part of the school" to this day, I dare to guess that their career was cut short before the start of World War II. By 1939, the USSR had four tank corps (10th, 15th, 20th and 25th), twenty-four separate light tank brigades, four heavy tank brigades and several dozen tank battalions and regiments as part of rifle

and cavalry divisions. In the spring of this year, the clash of Soviet and Japanese interests in China led to a direct military conflict on the Mongolian-Manchurian border. Back in March 1932, the Japanese created the puppet state of Manchukuo on the territory of the three provinces of Northeast China. Comrade Stalin had his own puppet on Chinese territory - the Mongolian People's Republic, which, on Soviet orders, was steadily moving straight "from feudalism to socialism, bypassing the capitalist phase." Except Moscow, no one recognized it. How independent People's Mongolia was can be judged by the fact that Stalin forbade the Mongolian government to establish diplomatic relations with anyone and even to let tourists into Ulaanbaatar.

Between two new formations of state, created with the help of foreign bayonets, whose relations from the very beginning

were overshadowed by friendship, the border did not exist. There was only nothing

on the ground, an unmarked desert zone with a width of several tens to hundreds of kilometers, through which various nomadic tribes freely moved. This territory turned into a place of constant clashes between the Manchurian and Mongolian border guards, who also "roamed freely".

The situation became even more aggravated with the start of a large-scale Japanese invasion of China and their intention to lay a strategic railway from Gianzhou to Solun, which was supposed to pass in close proximity to the virtual border of the MPR. The Mongolian ciriki, who hung around in the area of the planned construction, were unnerved

samurai. In this regard, the question arose: who, in fact, should own a strip of dunes east of the Khalkhin-Gol River measuring 70 by 20 kilometers (the toponymy of this area is typical: Big sands, Far sands, Peschanaya hill) - that is, the question of demarcation of the border. The Mongolian-Manchurian conference on the problem of disputed territories lasted intermittently for two years (from July 1935 to September 1937), during which 35 meetings were held, at which not a single issue was resolved. Fundamental differences over the number of representatives in the joint border commissions became an insurmountable obstacle and a reason for the breakdown of the negotiations: the Manchurian side believed that there should be three of them, the Mongolian one. In fact, Stalin was not satisfied with the very fact of establishing diplomatic and any other relations between the Mongolian Republic and Manchukuo. Undoubtedly, the Japanese position could not be called constructive either. Despite the fact that on the maps of both the Russian General Staff of the 1906 model and the General Staff of the Red Army, published in 1934 and 1937, the border between Mongolia and Manchuria was drawn either along the line of the Khalkhin Gol River, or to the northeast of it, in Moscow decided to "not give up an inch" and defend "Mongolian territory as if it were their own." It is completely incomprehensible on the basis of what topographical data and on the basis of what considerations the Kremlin strategists calculated that the border of the "Mongolian land" should pass exactly twenty kilometers east of Khalkhin Gol. Both sides were again preparing for a forceful resolution of the conflict. On March 12, 1936, a Soviet-Mongolian protocol on mutual assistance for a period of ten years was signed in Ulaanbaatar, replacing the two-year-old "gentleman's agreement". On the basis of this document, in early June, the entry of Soviet troops into Mongolia began, for a start - the 9th motorized armored brigade of V.F. Shipov and a separate armored regiment commanded by Colonel A.T. Pakaln. P. Genden, chairman of the Council of People's Commissars of Mongolia, who tried to interfere with the Kremlin in its noble aspirations, did not appreciate the Stalinist concern, was dismissed from the post of head of government, taken to the USSR, and a year later was arrested. At the Lubyanka, he was greeted as a native, was quickly persuaded to confess that he was planning to let Japanese troops into Mongolia, and was shot

on November 26, 1937, on the same day and in the same basement, together with the former military adviser to the Commander-in-Chief of the Mongolian People's Revolutionary Army, Commander L. I. Weiner. The Commander-in-Chief of the MNRA himself - Marshal G. Demid, who recommended the border guards not to bully the Japanese-Manchus too much - three months before that he went to visit Comrade Voroshilov and died at the Taiga station in the Kemerovo region, poisoned either by canned food, or

cutlets "a la Frinovsky"; The "enemy" of the marshal was declared posthumously.

At the end of

August 1937, the 36th motorized rifle division, 6th cavalry, 32nd mechanized and 7th motorized armored brigades moved to the aid of the "fraternal people". By October, a Soviet group of 30 thousand people, 280 armored vehicles, 265 tanks, 5000 vehicles, 107 aircraft was concentrated on the territory of Mongolia. The headquarters of the 57th Special Corps was located in Ulaanbaatar, which

commanded division commander N.V. Feklenko. According to the established tradition, the Red Army soldiers immediately started building dugouts and logging firewood.

With Soviet help and on the basis of the case concocted by Moscow specialists about the "pan-Mongolian and pro-Japanese spy organization", the first thing that happened in the country was a massive terror mobilizing the nation for great deeds: within six months, 16 ministers and their deputies, 42 generals were arrested and mostly executed and senior officers, 44 senior civil servants, hundreds of "Japanese saboteurs" (all Buryats were included in them) and "Chiang Kai-shek agents" (at least all Chinese). Buddhist monks were slaughtered without exception. 180 commanding officers were cleared out of the 18,000-strong Mongolian army, including the Deputy Minister of War, Chief of Staff of the Army, Deputy Chief of Political Administration, Chief of the Air Force, Chief of Staff of the Air Force, Commander of the 1st Cavalry Division, Commander of the only armored brigade ... the new commander-in-chief, concurrently the minister of internal affairs and chairman of the Extraordinary Commission, a worthy student of Kolya Yezhov - Khorlogiin Choibalsan, nicknamed the Police Marshal. In parallel, "culling" was carried out in the Special Corps itself: Corps Commissar A.P. was arrested and shot. Prokofiev, Colonel A.P. Pakaln, almost all political commissars were repressed up to and including the battalion level; expelled from the army brigade commander V.F. Shipov.

At the same time, extensive deliveries of Soviet weapons and military specialists to China began, which allowed the government of Chiang Kai-shek to arm dozens of infantry and even form the first mechanized division. The Chinese were brought field, anti-tank, anti-aircraft artillery, rifles and machine guns, ammunition, tanks and combat aircraft (including 6 heavy bombers TB-3 and 292 high-speed SB, on which "Chinese pilots", like Anton Wang Xi or Ivan Li Sitsin, raided Taiwan, Sasebo, Nagasaki and the harbors of Shanghai).

As for the disputed territory to the east of Khalkhin Gol, then, tired of the provocations of the Japanese-Manchu detachments, which, displacing the cyrics, "repeatedly penetrated Mongolian territory, reaching the eastern coast", the Soviet-Mongolian troops with artillery and armored vehicles (6- I was the cavalry division of Colonel Ch. Shariibu and the combined detachment of the 11th Tank Brigade, commanded by Senior Lieutenant A.B. Bykov - about 2600 people) on May 25-26, 1939 crossed the river, advanced 10 kilometers to the east and stood as a barrier. Units of the 9th Motorized Armored Brigade and the 149th Infantry Regiment of Major I.M. hurried to their aid. Remizov.

Details of further events - still state

secret, descriptions are scarce and contradictory.

After a pause, "the samurai crossed the border near the river" and struck at the Soviet-Mongolian positions by the forces of the consolidated detachment under the command of Colonel Yamagato, which was based on part of the 64th Infantry Regiment and the "reconnaissance battalion" of the 23rd Japanese division, the 8th Bargut cavalry regiment and two squadrons of the 7th cavalry regiment - a total of 1600 bayonets, 500 sabers, 75 machine guns, 12 guns, 7

armored vehicles and 1 light tank. The Soviet historian, without a shadow of embarrassment, states that the grouping of the Japanese-Manchurian troops "significantly exceeded the forces of the Mongol-Soviet troops in terms of their numbers and weapons." But just a couple of pages later, the author reports that ours had 39 cannon armored vehicles and 1,5 times more "large-caliber guns". And it is completely incomprehensible how one regiment and two squadrons of the Bargut cavalry can be 3.5 times greater in the number of sabers than two regiments and one squadron of the Mongol cavalry?

The goal of the "Japanese scoundrels", according to the order given by the commander of the 23rd Infantry Division, was the destruction of the "troops of Outer Mongolia in the Nomon Khan area."

"That is, Khalkhin Gol," the Soviet author clarifies. In fact, Lieutenant General M. Kamatsubara had in mind what he had in mind - the Manchurian settlement of Nomon-Khan, near which the 17th cavalry regiment of the Mongolian bagaturs was jiggling.

However, the Russian General Staff still assures us today that the Japanese planned to "seize the territory of the Mongolian People's Republic, and then break into the Soviet Transbaikalia, cut the Siberian railway and cut off the Far East from the rest of the USSR." Meanwhile, Japan, bogged down in China, was not ready for a war with the Soviet Union. Stalin knew this very well and, speaking to the military, characterized the events near Lake Khasan and Khalkhin Gol as small episodes, a test of strength on a patch: "Japan was afraid to start a war. We didn't want that either... A local conflict was conceived for the purpose of mutual testing of strength.

At dawn on May 28, Japanese aircraft launched a bomb attack on the crossing over Khalkhin Gol, which had been set up by Soviet sappers, on the rear lines and on the disposition of the Soviet-Mongolian troops. "Stalin's falcons", which were armed with 101 fighters and 88 SB bombers, demonstrated complete helplessness and could not help their troops in any way. With the main forces, the enemy attacked along the entire 20-kilometer front line, and along the eastern bank of the river from north to south, through the open left flank, a combat group under the command of Lieutenant Colonel Azuma was approaching the crossing in vehicles. During the day, the Soviet-Mongolian troops were thrown back to the crossing and by the evening they occupied a semi-circular defense on a bridgehead with a radius of two to three kilometers. The situation was not corrected by the unorganized entry into battle as the units of the 149th Infantry Regiment arrived. True, the flank attack of the Azuma detachment was repulsed by the initiative actions of the artillerymen and the counterattack of the sapper company, which prevented the Japanese from breaking through to the crossing.

On the morning of May 29, with the support of the 175th artillery regiment, which had caught up with the infantry, and five KhT-26 flamethrower tanks, the Soviet units went on the offensive and pushed the enemy back 1.5-2 km. The enemy understood



that he was defeated, and left the sacred Mongolian land. The late 9th motorized armored brigade, which made a 760-kilometer march across the steppe to Khalkhin Gol in thirteen days, did not even have to get involved.

No matter how confused the stories about the battles of May 28-29, it still seems that the Soviet-Mongolian troops were nevertheless expelled from the bridgehead by the Japanese, and themselves, considering the incident settled, moved away from the river. Evgeny Gorbunov mentioned this in passing in his book.

True, in his interpretation, the enemy, having only lost more than 400 soldiers and officers killed and "even more wounded", was demonstratively defeated and scattered, but even with his retreat he managed to frighten the command of the 57th corps: "For the removal of troops and military equipment, the Japanese command were called trucks. Soviet intelligence detected their appearance. But the chief of the operational department of the headquarters of the 57th Corps, who commanded a group of Soviet-Mongolian troops on the eastern bank of Khalkhin Gol, decided that the convoy moving from the border to the positions of the Japanese troops was bringing new reinforcements for a further offensive to the central crossing across the river. Therefore, without rechecking the intelligence data, he ordered the withdrawal of the Soviet-Mongolian troops to the western bank of the river, where they had been for several days. Japanese troops were withdrawn to Manchurian territory.

Komdiv N.V. Feklenko so reported to Moscow: "Our units, under the onslaught of the enemy, withdrew to the western bank of the river. Khalkhin Gol.

`scha Conditional about  
= \_ d 23td

oo ) ` 64 pl `)  
tdepden- Sum 35 - ^ Position st e E ab and «>

"=== ==> ^^ Offensive; RR in the  
morning 28.5

1 silt | ——— E Transfer with

troops (149 cn) m  
Position in<

The defeat of the  
Japanese acting  
troops 28.5

Counterattacks of  
the SS troops 29.5

"==> <= Retreat; we Manchuria

The fighting on the Khalkhin-Gol River on May 28-29, 1939. It is curious that, retreating and counterattacking, allowing then

the "broken" enemy to freely plunge into trucks and leave, our military leaders managed to accurately count the Japanese and Manchurian dead. True, according to the Japanese account, the total losses amounted to 290 people, among the dead was Lieutenant Colonel Azuma. A month later, the "TASS authorized" for the first time informed Soviet citizens about the events on the Khalkhin Gol River, about the defeat of three Japanese headquarters, that the border was locked, the raiders were defeated, and "the Mongolian People's Revolutionary Army lost 40 killed and 70 in these battles wounded man." Some of them were killed by friendly fire from our artillery, but these are uninteresting details. The commander of the 6th Colonel Shariibu was killed. The losses of the Soviet units amounted to 138 killed and missing

missing, 198 wounded, 10 armored vehicles. Stalin could not bear such a disgrace. The memories of the Russo-Japanese war, which was incompetently lost by the tsarist government, were still fresh in the people's memory, Iosif Vissarionovich could not allow his name to be associated with another "fall of Port Arthur". And he had no right to show weakness in the face of a predatory neighbor. On May 31, 1939, from the rostrum of the third session of the Supreme Soviet of the USSR, the newly minted People's Commissar for Foreign Affairs V.M. Molotov said: "It seems that it is time to understand who should understand that the Soviet government will not tolerate any provocations from the Japanese-Manchurian units on its borders. Now this must be recalled in relation to the borders of the Mongolian People's Republic ... It is also time to understand that there is a limit to any patience. And therefore, as soon as "Soviet intelligence" by June 3 discovered that "the bridgehead on the eastern coast was cleared by the enemy, the Soviet-Mongolian troops again took up the positions in which they had been before the May battles, and the observation was put up directly to the border." Naturally, "the May battles ended in the defeat of the aggressor, but they also revealed a number of shortcomings in the actions of the Soviet-Mongolian command, especially in relation to reconnaissance and combat control."

In early June, the Deputy Commander of the Belarusian Military District, "a good cavalryman", Divisional Commander G.K. was sent to Mongolia with an inspection. Zhukov with a group of officers. Arriving on June 5 at the headquarters of the 57th corps, which had moved to Tamtsak-Bulak by that time, Georgy Konstantinovich found out on the same day that "the command of the corps does not know the true situation", is cut off from the troops, and the main shortcoming in the work of the headquarters of divisional commander N. IN. Feklenko is the "lack of thorough reconnaissance of the enemy", which, in particular, allowed the Japanese units to make a well-known flank march and reach the crossing across the river. In a report compiled on the basis of the results of the Khalkhin-Gol battles, Zhukov indicated:

"The command of the 57th OK (special corps), represented by division commander Feklenko, advisers of the MNRA, the headquarters of the 57th OK and the MNRA showed criminal negligence in preparing the eastern direction for the deployment of hostilities.

In this area, neither the 57 OK Command and the MNRA, nor their headquarters

didn't know at all and hadn't been there. The commanders of formations and their headquarters have also never been in any direction and have not conducted exercises. Communications and control in this direction were also not completely prepared, and everything was based on only one wire to Tamtsak-Bulak. No communication centers were prepared. There were no operational calculations, worked out ideas and documents for the concentration of Soviet-Mongolian units, in the event of the deployment of hostilities, neither at the headquarters of the 57 OK, nor at the headquarters of the MNRA. Parts of the 57th OK and parts of the MNRA turned out to be very poorly prepared, the headquarters of the 57th OK was especially poorly prepared ... "

In short, Feklenko could not cope with command and control of troops "under special conditions", became interested in grain procurement, and grew fat away from Moscow on lamb and koumiss. What Nikolai Vladimirovich was previously strictly forbidden to do - well, there to move the command post from the capital closer to the theater of operations, use radio communications, succumb to provocations - was now interpreted as omissions in service and criminal negligence.

According to Zhukovsky's memoirs, he immediately went to the front line and, having familiarized himself with the area, talked with the commanders and did not see a single Japanese-Bargut even on the horizon, he immediately found out "the nature and scale of the unfolding events, determined the combat capability of the enemy" and his further intentions: "Everything indicated that this was not a border conflict, that the Japanese had not abandoned their aggressive goals in relation to the Soviet Far East and the MPR, and that actions of a wider scale should be expected in the near future." About his conclusions G.K. Zhukov immediately reported to Moscow, offering to "strongly hold the bridgehead on the right bank of Khalkhin Gol and at the same time prepare a counterattack from the depths," and also asked to move at least three rifle divisions and one tank brigade to the specified area and significantly strengthen the artillery.

The next day, a telegram from People's Commissar of Defense G.K. Zhukov was appointed commander of the 57th Special Corps. New moving parts were transferred to the Tamtsak-Bulak ledge.

It must be said that the new Mongolian government showed no enthusiasm for fanning the conflict, taking a "treacherous" position towards Moscow. Therefore, he, the government, almost in full force - thirty people headed by Prime Minister A. Amar - were taken to the "homeland of the victorious proletariat", condemned according to the most humane Soviet laws at a meeting of the Military Collegium of the Supreme Court of the USSR, imprisoned, and two years later shot. The authorities handed the Mongolian helm to a trusted comrade, a true friend of the Soviet people, Marshal Kh. Choibalsan, among others, who proudly bore the honorary title of "Honored Worker of the NKVD of the USSR."

In Moscow, meanwhile, L.P. Beria came to grips with checking the reliability of military topographers. In a report to Stalin, the new People's Commissar of the NKVD wrote: "We are investigating on the basis of what materials and documents in January 1934 the Military Topography Department of the Red Army published a map, according to which the state borders are shown passing along the Khalkhin Gol River, and it also turns out that served as the basis for the designation of the state border of the MPR and Manchukuo to the northeast of the Khalkhin Gol River. In general, the viper, hiding under the sign of the Military Topographical Directorate of the Headquarters

The Red Army, the Chekists "trawled" regularly, since from the very beginning of its existence, a diverse contra, which received education and shoulder straps under the vile tsarist regime, made a nest here. So, in the spring of 1923, the head of the corps of military topographers, former Colonel O.G. Dietz, his assistant Ivanishchev, head of the aerial photographic detachment Zhivotovsky and Commissar Tsvetkov. Dietz's second assistant, former Colonel A. N. Maksimovich, was expelled from the Red Army. In the same case, the old head of the corps of military topographers, a teacher at the Military Academy, former Major General A.I. Auzan. In the autumn of 1923, at the insistence of Commissar A.I. Artamonov, the head of the department, former colonel P.V., was fired from the corps. Kremlyakov, the leaders of the astroradio detachment, lieutenant colonel A.V. Kozhevnikov and I.V. Oreshkin, heads of the Omsk department, Major General N.D. Pavlov and North-Eastern - I.I. Seliverstov, as well as many ordinary employees. Only four remained in the Military Topographic Corps

professionally trained military men who at one time graduated from the geodetic department of the Military Academy: the new head of the corps, former Colonel A.D. Taranovsky, head of the geodetic department, Lieutenant Colonel P.P. Aksenov, heads of the department of scientific work, generals N.O. Shchetkin and Ya.I. Alekseev. IH, as well as assistant to the head of the department P.P. Aksyonov got the punishing hand of the dictatorship of the proletariat in 1930. Almost all employees of the department ended up in prison cells. Eight people were shot "for participation in a counter-revolutionary organization and wrecking activities", the rest received various terms and were shot later in places of detention and exile. To be honest, I can't say if anyone remained in the department who understood the meaning of the word "astroradio detachment". But, apparently, these measures did not help either - topographers continued to draw "wrecking maps", giving a headache to Stalin, Molotov and Beria.

Meanwhile, the "samurai" were preparing for a new clash. The plan developed by the Japanese command was similar to the one in May: by encircling and destroying the Soviet troops on the bridgehead, the right-flank strike group would go to the crossing and destroy them. The only difference was that instead of an offensive along the eastern bank of the river, it was foreseen to force it and throw it south along the western bank. For the operation, the entire 23rd Infantry Division was allocated, consisting of three infantry and one cavalry regiments, two regiments of the 7th Infantry Division, the 3rd and 4th tank regiments, three Bargut regiments of the Khingan cavalry division, heavy, anti-aircraft and anti-tank artillery - a total of about 24 thousand soldiers and officers, 92 field and 32 anti-tank guns, 87 tanks and 6 armored vehicles. The basis of the tank fleet was the type "89" and type "95". The first, considered medium, was an escort tank, an analogue of the Soviet T-26: it weighed 14 tons, had a 115-horsepower Mitsubishi engine, armor thickness of 17-11 mm, could accelerate to 27 km / h on the highway, was armed with 57-mm cannon (initial velocity of the projectile - 350-380 m / s) and two machine guns, and the gun ammunition was represented only by high-explosive fragmentation shells. The 7-ton "cavalry" tank "Ha-Go" (by the way, with a diesel engine) carried armor 12 mm thick, a 37-mm cannon (initial speed 675 m / s), two machine guns and developed a speed of 45 km / h.

The total number of the Soviet-Mongolian grouping in the Tamtsak-Bulak ledge by the end of June reached 12,541 people, 109 guns, 152 machine guns, 186 tanks and 266 armored vehicles.

The bridgehead on the eastern shore of Khalkhin Gol with a depth of 5-6 km was occupied by the rifle and machine-gun battalion of the 11th tank brigade (the former 32nd mechanized brigade), the 149th rifle regiment and the 9th motorized armored brigade - a total of 3200 people, 28 field guns, 7 "forty-five", 53 machine guns. The main striking force was 98 armored vehicles BA-6 and BA-10. The flanks of the Soviet units from the north and south were covered by the Mongolian 6th and 8th cavalry divisions, which took up positions on the western bank. In the area of the crossing was the 8th Mongolian armored division (18 armored vehicles) and three divisions of the 175th and 185th artillery regiments (34 guns). To the south of the crossing on Mount Khamar-Daba, an advanced command post of the corps headquarters was equipped. 120 km from the front line, in the Tamtsak-Bulak area, the 11th tank brigade was deployed, two-thirds equipped with BT-5 vehicles, the 7th

motorized armored brigade and the 24th motorized rifle regiment of the 36th motorized rifle division. Columns of the 8th armored brigade were on the way.

Throughout June, the Japanese-Manchu troops concentrated in the conflict area. On July 2, artillery preparation began, then, under the cover of artillery, a fettering group of Japanese troops under the command of Lieutenant General Yasuoka went on the offensive. I find it difficult to name the exact time, because in the works of various Russian historians I found both 10.00 and 21.00, and "by the evening, when the summer heat subsided."

In the main direction, the 64th and 28th Infantry Regiments, accompanied by 80 tanks, were deployed against units of the 9th Motorized Armored Brigade and the 149th Infantry Regiment. They managed to push the Soviet troops back to the river, but the Japanese infantry did not know how to follow the tanks, there was no interaction between the units, they failed to break through to the Yasuoka bridge, by 2 o'clock in the morning the offensive stalled. Tank regiments retreated to their original position, ten vehicles were hit by artillery and armored vehicles. The Soviet command raised the alarm and moved to the front line all the available reserves, planning to fend off the enemy's attempts to break through to the western coast with counterattacks.

2319 (64.71.72 para 23 on)

7pd (286.28 tt) Ogin-D.

Conditional with

294 Massrow

a ý4 CMI pro \ 1

S, wowazi

< "< Ai troops 2\$

o Zoayy

<@ == 1 Coming

RJ k\_,^d for 2.7  
, s" sows PROlvia |  
cabbage soup } combat 27

2 o  
\  
No. 7,  
effective to. 1 for the ,  
sake of, # 8 together  
in the sky in} - p. m  
noy grue! \u003d sopka@  
eschanoya'  
nina 3- <A + high.  
th &]/: = Set # th \,  
to outcome E.

Fighting on the Khalkhin Gol River 2-5 June 1939

A ben  
"a

\

Aya ta. Ro: ka` \* To ,`

, RI UR  
Sy and

! oto fur. 6 < U (Reserve)  
No. m omon- ,  
Khan-Burd-0bo "G

yy - 248 \u003d 2

">

O zoroknaso V VV AG E

=  
=.  
< -  
ov.  
5

}

A

A

While fighting was going on on the bridgehead, to the north of it, bypassing the Soviet positions, the strike group of Major General Kobayashi, numbering about 13 thousand people with a hundred guns, made a covert march along the dunes, at two in the morning advanced units reached Khalkhin Gol in the area of Mount Bain Tsagan and proceeded to force the water barrier - first on rafts, boats and swimming, then the sappers built a pontoon bridge. By 8 am the crossing was over, and the Japanese troops, having thrown back the Mongolian cavalry squadrons, occupied the top of Bain-Tsagan, where they began to busily dig in and prepare firing positions for artillery.

Anti-tank and regimental guns were lifted up the steep slopes by hand. The path to the south, to the rear of the Soviet grouping, was open ... Now a little about topography, "knowledge of the true situation" and "careful

intelligence."

Mount Bain-Tsagan, in fact, is not a mountain. This is a high cliff on the western bank of Khalkhin Gol: "The steep slopes made it inaccessible to climb to its top from the side of the river of tanks, armored vehicles and vehicles. Even artillery could be raised to the top with difficulty, and only in certain places. Looking from west to east, the mountain was not visible. The commander of a tank or armored car saw through the observation slot of the tower a flat, without a single ledge or landmark, a smoothly rising terrain, which at the very top ended in a steep cliff to the river. From the top of the mountain, the area east of the river was perfectly visible to the very border for 15-20 kilometers ... The width of the Khalkhin-Gol River reached 130 meters, which, with a depth of two meters and a strong current, created a serious obstacle for the troops. The river valley was a heavily swampy depression with a width of one to three kilometers.

These mountains, rivers and valleys, a group of thousands of General Kobayashi with heavy weapons, managed to overcome without hindrance and completely unnoticed by the Zhukovsky headquarters. As the historian writes: "The enemy, who captured the top of Bain-Tsagan, would dominate the area tens of kilometers west of the river. This was well understood by the Japanese command." The Soviet command, apparently, did not understand this. What prevented the organization of the most ordinary observation post on Bain-Tsagan, consisting of three sensible fighters with a radio station or at least a motorcycle? And "excellent to view the area to the very border."

Over the past month, nothing has been done to reveal the forces and intentions of the enemy. Marshal G.K. Zhukov admits that "the Japanese concentrated their troops during June and prepared them for the operation ...", but all this "was found out later."

The organization of "thorough reconnaissance" somehow did not go well either at the beginning of the conflict or later.

Firstly, the headquarters of the corps was totally infected by "enemy agents", to which the special officers ranked the chief of staff of the brigade commander

A.M. Kushchev, his assistant, Colonel Tretyakov, and the head of the operations department, Colonel Ivenkov. So, G.K. Zhukov reported: "Preparing for hostilities, the Japanese hoped for the difficult situation that was being created for the Red Army due to the remoteness of the area from the railways, and, apparently, they also placed great hopes on their agents, which they had at the headquarters of the 57th Special corps and the MNRA in the person ... "The listed persons" subversive treacherous work "prepared the defeat of our troops, but were exposed and arrested at the end of June. Interestingly, even the Military Collegium did not find a reason to apply capital punishment to those accused of treason, so they were humanely given sentences. Divisional commander Feklenko, one might say, was lucky: he was recalled to Moscow, put in command of the 14th heavy tank brigade ("ceremonial" T-35s), and a year later they were given a tank division (Georgy Konstantinovich did not change his habits. In August 1941, already expelled from the General Staff for the collapse of work, he informed I. V. Stalin: "I believe that the enemy knows very well all

our defense system, the entire operational-strategic grouping of our forces, and knows our immediate possibilities. Apparently, among the very important workers in our country, who are in close contact with the general situation, the enemy has his own people.

Secondly: "Many commanders, headquarters and intelligence agencies showed insufficient experience at the beginning of hostilities ... The difficulty of obtaining information about the enemy was aggravated by the absence of a civilian population in the combat area, from which one could learn something. There were no defectors from the Japanese side ... It was rare for small reconnaissance groups to infiltrate into the depths of the enemy's defenses, since the Japanese very well viewed the terrain in the area where their troops were located.

On the other hand, Japanese sabotage groups, in the same conditions of the bare steppe and the absence of a civilian population, freely penetrated Mongolian territory and military installations, obtained information, "cut telephone wires" and "tried to blow up crossings." To fight them, in mid-July, a combined battalion of 500 people, recruited from the best border guards, arrived from the Trans-Baikal Military District. The main tasks of the detachment were "protection of the combat area from the penetration of spies and saboteurs, protection of the command post, communication lines, warehouses, reservoirs, crossings." In the first two weeks of "combat work" alone, the Chekists detained 160 idlers in the frontline zone, among whom several dozen agents of Japanese intelligence were identified.

So, by the morning of July 3, almost an entire Japanese division imperceptibly "leaked" into the location of the Soviet-Mongolian troops. Its advanced battalions began to advance towards the only crossing that linked

Soviet troops on the bridgehead with the western coast.

According to the annals, the role of the goose that "saved Rome" was played by the adviser to the Mongolian army, Colonel I.M. Afonin. Before dawn, he went to Mount Bain-Tsagan to check the defenses of the 6th Cavalry Division, and

"quite unexpectedly found Japanese troops there." The colonel rushed to the command post on Mount Khamar-Daba, where the chief of staff of the corps, brigade commander M.A. Bogdanov. He reported the situation in Tamtsak-Bulak to Zhukov by phone, the divisional commander on the move



adjusted the route of advancement of reserves, redirecting them so that all the "trajectories" converged at Mount Bain-Tsagan.

The battalions of the 11th tank brigade of brigade commander M.P. were the first to arrive at the scene. Yakovlev and, obeying the order of the corps commander, together with the Mongolian motorized armor division in three groups at different times and from different directions without preparation, without

support of rifle and artillery units, having no idea about the forces and defense of the enemy, attacked the Japanese positions. Just like in the Kyiv maneuvers, all interaction and control on the battlefield consisted of the "Forward!" command. The impact of 132 tanks, firing from all barrels, made a great psychological impression on the Japanese soldiers, but did not turn them to flight. They responded with fire from 37 mm rapid-fire cannons and 70 mm regimental guns, bottles of gasoline and retractable mines. According to the memoirs of a Japanese officer, "Russian tankers jumped out and tried to escape, running away towards their positions. The bodies of many were badly burned, and they staggered and took several steps in agony before falling. Some tried to help

wounded comrades, others tried to hide under the bottoms of flaming tanks.

"Betushki" and chemical T-26s, ironing the trenches, turned back.

It was Zhukov's turn to be surprised.

"As a result of this attack," the report "On the use of armored forces on the river. Khalkhin-Gol "- not supported by artillery and without interaction with the infantry, the brigade lost 36 tanks knocked out and 46 burned out. This experience suggests that such an attack is acceptable as an extreme case due to operational considerations.

The illiterate actions of the Soviet command, the usual hatred in violation of all charters, are explained to us by the fact that "there was no time to wait for the motorized infantry to approach and conduct a joint attack." There was no time to organize a fight.

Lost Motorized Infantry - 24th Regiment I.I. Fedyuninsky - appeared

by noon and 13.00 was also thrown into battle "without organized time and place of interaction with the tank brigade."

At 15.00 in a similar way - after a 150-kilometer march, without artillery preparation, without infantry support, having no information about the enemy, focusing on burning tanks - they moved from the south to attack

fifty armored vehicles of the 247th battalion of the 7th motorized armored brigade of Colonel A.L. Lesovoy. Assistant Chief of Staff of the Battalion Senior Lieutenant K.P. Petrov reported: "During the battle, I moved with the headquarters, and the chief of staff ordered me to observe the actions of the battalion. With the approach of the battalion to the vehicles burning at Bain-Tsagan, I immediately saw how 4-5 armored cars of the 1st and 2nd companies caught fire. The number of vehicles on fire was growing, some of the rear armored cars turned back and went to the rear, where we collected them. The 3rd company almost did not enter the battle, and only one of its vehicles was put out of action. The rest, seeing the burning armored cars, did not go further. Commander

armored car of the 1st company L.M. Streltsov: "As I approached the enemy, I fired from a cannon, and while it was being loaded, from a machine gun. A good hit from a cannon noticed only one. The very first enemy shell that hit the car killed the machine gunner and wounded the driver, and the gas tank caught fire. I hear the second shell smashed the engine. I once again climbed into the tower, but the enemy opened fire on the tower. I see that the armored cars of Yeremeev and Kozloborodov and Lieutenant Samardak caught fire on the left, and the entire front of my armored car flew off. I was 150 meters from the enemy trenches, I decided to leave the car and crawled back to the rear. In a short-lived battle, the battalion met with dagger fire lost 33 armored vehicles (20 burned down) and 85 personnel.

At 19:00, Soviet units launched a joint attack on Japanese positions from three sides: south, west, and northwest. However, the Japanese again beat off the attack. During the day, the Yakovlev brigade lost 77

tanks, the Lesovoy brigade - 37 armored vehicles, another 8 armored cars were out of action in the Mongolian armored division.

In a conversation with the writer Konstantin Simonov, Marshal Zhukov, recalling the events of July 3, said: "I decided to attack the Japanese on the move with Yakovlev's tank brigade. I knew that without the support of the infantry, she would suffer heavy losses, but we deliberately went for it. The brigade was strong, about 200 tanks. She turned and walked boldly. Suffered heavy losses from Japanese artillery fire, but -

I repeat - we were ready for this. About half of the personnel of the brigade lost killed and wounded and half of the vehicles. But we went for it. Even greater losses were suffered by Soviet and Mongolian armored units,

who supported the attack of the tank brigade. Tanks burned before my eyes. 36 tanks deployed in one of the sectors, and soon 24 of them

were already on fire. But on the other hand, we completely crushed the Japanese division. Sterley." If!

The Japanese were "crushed" for another two days, day and night. According to all the rules of military science: tanks, aircraft, heavy artillery. The continuous attacks of the Soviet-Mongolian troops forced General Kamatsubara to give

retreat order. The Japanese, taking heavy equipment, left along the bridge, which they did not manage to destroy.

At the same time, the group of General Yasuoka continued to attack the eastern bridgehead, which was reinforced from the Soviet side with tanks and armored vehicles from the 11th tank and 9th motorized armored brigades. Here, on July 3, the enemy tried to achieve a turning point by throwing 73 tanks into the attack. Fortunately, the Japanese used them in a Zhukovsky way, without infantry and artillery support, for which they paid the price, losing 41 vehicles (of which 13 were irretrievable). Soviet BT-5 and BA-10 fired from pre-prepared positions from a distance of 300-400 meters, a domestic 45-mm armor-piercing projectile easily pierced the protection of low-speed Otsu, while firing a Japanese 57-mm high-explosive fragmentation grenade " on armored cars did not inflict defeat on them and did not justify itself. The commander of the 3rd Tank Regiment, Colonel Yoshimaru, was killed in the battle. More "samurai" tanks were not used.

The losses of the 11th tank brigade in three days of fighting amounted to 138 tanks (half irretrievably) and 259 tankers. 191 people dropped out of the Fedyuninsky regiment. In total, in July, the Soviet-Mongolian units lost

175 tanks and 143 armored vehicles. The enemy, as usual, was smashed to smithereens, "thousands of corpses of Japanese soldiers and officers littered the slopes of Bain-Tsagan." But, according to the headquarters of the Kwantung Army, the group

Kabayashi lost about 800 people killed and wounded, and all of them, both dead and alive, were evacuated. The losses of two tank regiments amounted to 139 people.

Sung in the verses of K. Simonov, the valiant blow of the brigade of M.P. Yakovlev was the first experience of the combat use of a large tank formation, and the experience was rather negative. It is justified by operational considerations, by extreme necessity that arose in a crisis situation. However, the border battles of the summer of 1941 showed that this practice had become traditional in the Red Army due to the inability to organize reconnaissance and interaction of troops on the battlefield - something always interfered with our generals: either the enemy, or the notorious "operational considerations". (For an example, one can recall how G.K. Zhukov "crushed" the enemy in Ukraine: although the command of the Southwestern Front had thirty times more tanks than in the Special Corps, the tactics "turned around and boldly went" did not work against the Germans. The front suffered fantastic losses, but "we were ready for this.")

According to secret reports drawn up following the conflict, the "best in the world" Soviet technology was generally consistent with

the requirements placed on it.

The BT-5 and BT-7 tanks proved to be "excellent combat vehicles capable of solving all combat missions that can be assigned to light tanks, in accordance with the power of their weapons and armor. The disadvantages of these tanks included the unfortunate location of the gas tanks, "which was the main cause of the fire of these tanks from Japanese armor-piercing incendiary shells of 37-mm guns."

Artillery tanks BT-7A "proved to be an indispensable tool in the fight against anti-tank guns." Automotive gun mounts SU-1-12, as well as on Khasan, did not justify themselves: "They cannot accompany tanks in the attack - they will be immediately disabled. It is difficult to dig them into the ground with a machine, which is why they are a very grateful target for artillery and enemy aircraft.

The T-26 tanks showed themselves from the best side: "Despite the weak engine, they walked perfectly along the dunes. Very high survivability of the tank. There were cases of several hits on the tank, and it did not fail. And what is especially pleasant: "The tank burns very rarely."

I really liked the flamethrower XT-26 and XT-130: "As a rule, the Japanese infantry, being in the trenches, could not withstand the fire of these tanks and fled." I didn't like the T-37 and T-38 at all: low cross-country ability on sandy soils and completely "unsuitable for attack and defense" (in fact, they were not created for this).

Cannon armored vehicles "proved to be remarkable", demonstrating good maneuverability and endurance. True, on the battlefield they revealed a completely idiotic design flaw in the form of a 108-liter fuel tank above the head of the commander and driver. When a projectile hit, burning gasoline poured out on their heads, which "had a very bad effect on the morale of the crews."

In tactical terms, trivial things were confirmed, such as: tanks can successfully hit firing points, but are not able to provide control over the occupied territory, and infantry without tanks is extremely reluctant to attack well-prepared defenses. And most often it turned out that way - separately-sleeve: "The organization of work on closely linking the actions of tanks, infantry and artillery was a weak point in the organization of the battle. The desire to quickly and quickly attack and destroy the enemy without a sober and realistic calculation of the possibility of a simultaneous friendly attack led to marking time and a number of unsuccessful attacks with heavy losses ...

There was very little time to organize interaction and link actions, and the tankers understood their task already during the battle.

A tank attack began with a signal from the company or platoon commander "Do as I do!", and that was where all control ended. Flag signaling and signal rockets did not justify themselves, the crews did not see them in the confusion of battle; radio stations were considered unreliable, the personnel knew them poorly, and therefore there was no time to use radio communications: "The microphone on the chest interferes with work, gets confused, and there is no time to tune and switch." The handrail antennas were often damaged by fragments, and, in addition, the antennas unmasked the command vehicles. General leadership at the battalion-brigade level was carried out by liaison officers.

In the end, having gathered their strength, creating an overwhelming

superiority in people and equipment, including 498 tanks and 385 armored vehicles, at the end of August 1939, the "Japanese mother" was shown to the enemy. The main role in the encirclement of the enemy group was played not by tank units - they were distributed among rifle formations, but by the "armored cavalry" - the 9th and 8th motorized armored brigades. It was their swan song, in 1941, cannon BAs with bulletproof armor disappeared from the scene completely unnoticed.

In total, during the conflict, the Soviet side irrevocably lost 124 armored vehicles (another 209 received combat damage and required repairs of "various degrees of severity") and 253 tanks (including 186 units of BT-5 and BT-7, 12 "chemical vehicles" and 8 cannon T-26). According to incomplete data, 695 tankers died and went missing, among them - brigade commander M.P. Yakovlev, and 864 were injured.

The big sands and the far sands went to Mongolia, I don't know, maybe apple trees are blooming there today. But still, armored marshal P.S. Rybalko for some reason believed that at Khalkhin Gol "we disgraced the whole world." And Marshal M.V. Zakharov wrote: "The events in the region of the Khalkhin-Gol River revealed a number of shortcomings in the combat training of the troops. These shortcomings were partly due to the fact that the statutes and a number of instructions were withdrawn under the pretext that they were mainly written by persons who had been imprisoned or shot.

They didn't have time to create new charters and instructions."

Top class! If, for example, the pest M.N. Tukhachevsky demanded that the modern fighter should have "the ability for the purposeful and productive use of advanced technology", which means that now everything must be done the other way around, and in general our tactical art is developing "on the pivot of a high political and moral level ... The power of class education carried out by our party, is a mighty force, and, moreover, only the power of the Red Army. And there is no need for the "class fighter" and "class commander" to fool their heads with cosines! So, since 1938, a TOS sight stabilized in a vertical plane was installed on T-26 tanks, but less than a year later they began to remove it - "due to the difficulty of mastering it by personnel." And Zhukov can fully show his original talent, without looking back at the charters that "did not have time to create." Not in them, Stalin explained, is the strength of the army, not in professional training: "The main strength of the army lies in whether the policy of the government in the country is right or wrong ... With the right policy, even average commanders can do much more than the most capable commanders of bourgeois states".

Shortcomings in the organization of troops in August 1939 were discussed by a special commission chaired by G.I. Kulik. It included the Chief of the General Staff B.M. Shaposhnikov, patriarchs of the "cavalry clan" - S.M. Budyonny, B.M. Shchadenko, S.K. Timoshenko, M.P. Kovalev, K.A. Meretskov and others. With regards to the existing organization of tank troops, the head of the Armored Directorate, Commander D.G. Pavlov raised the question of the need for such structures as tank corps. Commander 1st rank B.M. Shaposhnikov proposed to eliminate them, saying that "it is unlikely that such breakthrough conditions will arise in which entire mechanized corps will be used," and the commander of the 1st rank G.I. Kulik confidently stated that the headquarters of the corps would not be able to cope with such a colossus: "From the point of view of management, the commander of the mechanized corps will not be able to

unite in their hands the infantry attached to it and the supporting artillery. I rule out a sudden raid of an entire mechanized corps behind enemy lines. The enemy will undoubtedly detect the maneuver of the mechanized corps in time and counteract it. In connection with the enormous growth of anti-tank weapons, I also deny the independent actions of tanks during a breakthrough, they must act in close connection with the infantry. Marshal S.M. opposed the hasty decisions. Budyonny, who reasonably noted that dispersing the command and control of tank corps is not difficult, but if suddenly the need for raiding arises and you need to throw a strike group into a breakthrough, then you will have to create and put together its headquarters during the course of hostilities and the group itself will have to be formed from random parts. And then the impromptu headquarters will definitely not cope with the management. Maybe Semyon Mikhailovich lacked education, but common sense and experience in deep raids were indispensable.

As a result, the commission recommended leaving tank corps, but excluding rifle and machine gun brigades from them, and rifle and machine gun battalions from tank brigades, that is, in fact, eliminating the possibility of independent action. Tank formations were supposed to assist the infantry and cavalry, and not "get involved in raiding." The tank corps can sometimes - act independently when the enemy is upset and unable to defend - a purely cavalry task: the pursuit of a defeated enemy.

In fact, along with the "saboteurs", the theory of a deep operation was also buried in an unmarked grave: "A deep study of military scientific problems, the development of fundamental issues of leading troops began to be replaced by narrow, purely applied solutions - creeping empiricism. And strategy as a science and academic discipline was not studied at all in military academies. All this was the result not only of unjustified repressions, but also of the impasse in which the social sciences, including the military, found themselves. Military theory was reduced essentially to the compilation of a mosaic of Stalin's statements on military issues. The theory of deep operation began to be questioned on the grounds that there are no Stalin's statements about it, that its creators are "enemies of the people." Its elements, such as, for example, the independent actions of motorized and cavalry formations in front of the front and in the operational depth of the enemy, were even called sabotage and were rejected for this absurd reason.

The divisional commander G.S. went through the stages. Isserson and served 15 years from bell to bell; he was never allowed into the Pratzén Heights. For many other theorists of mechanized warfare, "the corridors ended in a wall."

The formation of the first large tank unit of the Wehrmacht, designed to solve operational problems - the 1st Panzer Division - began in 1935. The tank brigade of the division consisted of two regiments. Each regiment, in turn, consists of two tank battalions (four combat and one headquarters company in the battalion). In total, there were 22 companies in the tank division, which were supposed to have 324 tanks. The main combat vehicle was the PzKw III. The main issue that the German generals decided at this stage was the fundamental possibility of controlling such a large amount of equipment. First

The exercises have yielded encouraging results. By September 15 of the same year, there were already three tank divisions in the ground forces. In 1936, contrary to the opinion of Guderian, who protested against the dispersion of tanks, three light infantry divisions were created, which included a tank battalion - 86 tanks. Four motorized divisions were formed for joint operations with tank formations.

The final approval of the idea of the operational use of tank masses in the offensive and its transformation into one of the most important elements of the German military doctrine was expressed in the directive on the leadership and combat use of a tank division of June 1, 1938. If in the first field regulations, issued in 1933-1937, the use of tanks was not conceived without tactical interaction with the infantry, then the indicated directive proceeded from the need for the widespread operational use of a tank division in the offensive. Defense was seen as an episodic phenomenon.

The tank division "model 1939" consisted of a tank and motorized brigades, an artillery regiment, a motorcycle-rifle, reconnaissance and engineer battalions, an anti-tank battalion, a communications battalion and rear services. In it, according to the state, there were 11,792 people, 324 tanks, 10 armored vehicles, 130 guns and mortars. Thus, organizationally, tanks were not dispersed among infantry formations, most of them were concentrated in tank divisions, for

leadership of which there was a special headquarters subordinate to the commander of the armored forces.

The motorized division consisted of three motorized and one artillery regiment, reconnaissance and engineer battalions, a communications battalion and an anti-tank division. The division had 16,400 men, 282 guns and mortars, about 4,000 vehicles, armored vehicles and motorcycles. In order to increase the mobility of the motorized division in 1940, one motorized regiment was excluded from its composition, which led to a decrease in the number

personnel and equipment.

For the duration of the war, it was planned to create motorized corps (usually two tank and one motorized division) for an offensive in the main directions. Being the main tactical formations of the Wehrmacht, tank and motorized units enjoyed priority in armament and manning. The personnel of these troops were selected from technically trained and "ideologically sound" conscripts. These were primarily skilled mechanics,

drivers, locksmiths. The main reserve for replenishing personnel for mechanized and tank formations was the motorized organizations of the Hitler Youth and the National Socialist

car body. 50 hours were allotted for practical training of a tank driver.

During the maneuvers, special attention was paid to the organization of an uninterrupted supply of mobile units, the creation of a repair base, the training of personnel, and interaction with other branches of the military.

On September 1, 1939, questions of theory were translated into practice. The Polish campaign showed that in the face of a massive attack by tank and motorized forces, linear defense

outdated. Any form of line defense, whether it consisted of permanent structures or field fortifications, turned out to be the worst form of defense: when German tanks broke through the defensive zone, its defenders, stretched along the front, could not concentrate their forces for a counterattack.

"The tactics of the German armored forces were based more on the speed of action than on firepower. The main task was to bring confusion. Therefore, the Germans usually cared mainly about the depth of the breakthrough. Knots of resistance, fortified areas, anti-tank obstacles were usually bypassed; German commanders tried to find the lines of least resistance leading to the rear of the enemy. After the breakthrough, success also developed in depth, instead of following the more prudent method developed by the French: expanding the breakthrough along the front ... bombers, attack aircraft squadrons and tank companies interacted perfectly with each other," the English military theorist J. Fuller analyzed the course of events .

On September 9, the tanks of General Reichenau reached Warsaw, on the 15th

Guderian captured Brest.

On September 17, the Red Army set off on the Liberation Campaign. The two Soviet fronts had about 600 thousand people, more than 2000 aircraft and about 4000 tanks. Two tank corps and 18 tank brigades took part in the action to "protect the life and property of the fraternal Belarusian and Ukrainian peoples". Two weeks later, the Polish state ceased to exist.

The conclusions of the campaign "brothers in arms" made just the opposite.

General Guderian came to the conclusion that the tank divisions, having passed the baptism of fire, "completely justified themselves", as well as the efforts spent on their creation. Therefore, soon the light infantry divisions were converted into tank divisions.

The new generation of Stalin's nominees, on the contrary, was convinced that it was impossible to direct the actions of large tank formations, organize their interaction with infantry and aviation, and establish logistic support for them. The mass of armored vehicles clogged all the roads and firmly stood up, giving the infantry the honor of independently liberating Ukrainians and Belarusians "from the pan yoke." The head of the armored forces of the Kyiv military district, brigade commander Fedorenko, reported: "The actions of the tank corps showed the difficulty of control, its cumbersomeness; separate tank brigades acted better and more mobile. The tank corps must be disbanded and have separate tank brigades. There was another weighty argument voiced by Deputy People's Commissar of Defense G.I. Kulik: "The enemies of the people preached the complete independence of the mechanized corps and thereby tried to destroy the tanks. In our concept, tank corps are not needed, and tank brigades should be attached to rifle or cavalry corps.

The political leadership perceived the march to the West as a convincing confirmation of the combat power of the Red Army - they managed no worse than the Germans. After a brilliant victory over the enemy, who practically did not offer resistance (thanks to Marshal Rydz-Smiglom, who gave his troops the order "with the Soviets not

to fight" and go to Romania) no one wanted to raise "provocative questions" about the poor training of personnel, the ugly state of communications and materiel. The nightly "tactical trick" in all tank brigades was to pour the remnants of fuel into the vehicles of the forward detachment in order to reach the line indicated by the command the next day. According to the operational report of the chief of staff of the 32nd tank brigade, Major Bolotov, the brigade, having made a 350-kilometer march to the west (mostly along the main highway of Belarus), irrevocably lost one T-26 tank in combat clashes, and abandoned 69 vehicles along the road " due to technical defects. In total, the armored forces of the two fronts scattered almost half a thousand defective tanks along the roads.

On November 21, 1939, the Main Military Council found it necessary to disband the tank corps and have in peacetime 28 separate brigades with a staff strength of 258 BT or T-26 tanks and 2562 people, three heavy brigades - 117 T-28 vehicles, 39 "batushki", 2500 people, one RGK brigade - with T-35, T-28, BT tanks and 10 tank regiments,



deployed in wartime to tank brigades.

It was also planned to create 15 motorized divisions during the year - 257 tanks and 73 armored vehicles each - which were supposed to be used to develop the success of combined arms armies or as part of a cavalry-mechanized group.

According to M.F. Zakharova: "The adoption of this decision was largely facilitated by D.G. Pavlov, who, on the experience of the march of the 15th tank corps to the western regions of Belarus, proved the uncontrollability of the corps on the march and the need to have only separate tank brigades in the armored forces.

In total, the combat strength of the tank units of the Red Army in peacetime was supposed to be 8200 linear tanks, of which 3295 were of the BT type and 3808 of the T-26 type. In wartime, the tank troops were supposed to have 11,085 tanks, and with the combat vehicles of rifle and cavalry divisions, the army was supposed to have 15,420 tanks. And they were still there, even without taking into account the wedges and "floaters".

The total regular strength of the armored forces in peacetime was determined at 105 thousand people.

Or maybe that's how it should be? Well, if there was no one left in the Red Army who would know what these same tank corps are for and how to steer them.

Nine days later, the Soviet Union, "strengthening its northwestern borders", attacked Finland, "in connection with the active military preparations" of the latter and "the deliberate aggravation of the situation by the ruling circles." Attacked, so to speak, preventively. The invasion was supported by the 10th tank corps, the 20th heavy, 34th, 35th, 39th and 40th light tank brigades, 20 separate tank battalions of rifle divisions - 1860 tanks and 300 armored vehicles. Later, the 29th light tank brigade and a significant number of individual tank regiments and battalions arrived at the front. 5 ammunition, 3 refueling and 10-15 days were allotted to defeat the "White Finns", with an average rate of advance of the troops of the Leningrad Military District of 10-12 km per day. The Lilliputian army was armed with only fifty tanks, mainly Renault ET-17, and 112 anti-tank guns.

However, a number of "good reasons" invented by the Soviet

chroniclers in order to explain the defeat of the Red Army in the summer of 1941, had no effect on the Finns. Although they were attacked treacherously, without declaring war, pretending that there was no war at all, but that there was a struggle of the working people of Finland for their liberation from the oppression of capital. They attacked with many times superior forces that had "combat experience" of the Liberation Campaign. History gave the Finns two years less time than we did, and it was not possible to "pull off" Soviet aggression. There were no tanks in the country of Suomi, nor decent aviation. Of the means of motorization - only skis. An, broke off the Kremlin dreamers. Tanks under red flags did not parade along the bridges of the city of Helsinki past the podium with a portrait of Comrade Stalin, as it was in Grodno, Lvov, Bialystok, another republic did not appear on the map of the USSR.

As soon as the Soviet troops entered into a serious battle with the army,

which was not going to drape somewhere in Sweden, but put up stubborn and skillful resistance, as the entire control and supply system collapsed. And how to supply them if you don't know how many troops you have at your disposal, where they are and what they do. The tanks stood idle, without fuel. Many commanders simply left the radio stations "at home", since they did not study radio communications, they did not know how to use it, and therefore "did not like it." Telephone wires were brought somewhere and could not be found for a long time. Without communication, the only thing left was "to direct the operation with a sign of the hand." What can we say about interaction, even if the headquarters of neighboring armies could not establish communication. It quickly became clear that the "Mannerheim line" is not a prop, and no one knows how to overcome it, its mark is unknown. And even so: "Instructions on breaking through fortified areas were not found at the front headquarters, since at one time it was classified as wrecking documents and burned. I had to get it in the Library named after V.I. Lenin. So, first we went to the war, then to the library. It didn't work out otherwise.

About the preparation of the continuously arriving replenishment, one cannot even say that it was bad, up to 30% of the Red Army "did not know how to handle a rifle." Ordinary fighters did not understand the goals of the war started by Moscow, were prone to panic and often fled the battlefield, throwing their weapons, the number of deserters and "crossbows" grew. For many officers, the tricky concept of "azimuth" remained a mystery behind seven seals. Staffs worked mediocre, which got lost in a combat situation, did not know how to organize reconnaissance, did not know how to use equipment correctly. The commanders of rifle divisions and regiments, not understanding the nature of modern combat, ruined the tank battalions attached to them, forcing them to independently break through the enemy's defenses in depth, since the infantry, relying on the power of Soviet technology, did not attack tanks (without tanks - all the more). The tankers themselves conducted reconnaissance, under the cover of their fire, made passages in gorges and scarps, searched for and destroyed targets, returned for infantry to lead it forward, and died from 37-mm Bofors shells that pierced the armor through, from bottles of gasoline, which Finnish guys stocked up in abundance, on mines, land mines and in pit traps. Operating north of Lake Ladoga, driven into forests and swamps, the 34th light tank brigade was surrounded on New Year's Eve and in further battles lost 128 tanks and almost

50% of the personnel. Brigade commander S. Kondratyev, brigade commissar regimental commissar Gapanyuk, head of the political department regimental commissar Teplukhin, head of the special department Doronkin, having a poor choice between captivity and tribunal, shot themselves. 171 people managed to escape from the ring. The weak point of the tank troops was an acute shortage of evacuation and repair facilities, spare parts, trucks and tankers.

Having washed with blood, they realized that until the reserves were brought up, supplies were established, until the units were replenished and learned to interact, a successful breakthrough of the Finns' main line of defense was hardly possible. Again, read the books...

The Finns were crushed three months later - with a huge amount of equipment and manpower. During the campaign, the Red Army lost 1936 tankers killed and missing, and almost the same number of wounded and frostbite - 1994 people. 3312 tanks fell out of action - 2034 units were knocked out and burned by the enemy, the rest were out of order by

technical reasons. The Finnish army doubled its tank fleet due to the trophies taken: in 1940, 84 tanks and 22 armored vehicles "delivered" from the USSR were put into service.

In general, they again "disgraced the whole world", finally convincing Hitler of the incompetence of the Red Army. By May 1940, the reorganization of the tank forces was completed: the Red Army had four motorized divisions and 39 separate tank brigades. They were fully formed formations, provided with materiel and trained personnel. In addition, the cavalry divisions included 20 tank regiments, and the rifle divisions - 98 separate tank battalions.

However, in the same momentous month of May, German tank wedges ripped open France and ultimately decided the outcome of the war by their actions. Already in June, the People's Commissariat of Defense decided to restore mechanized corps in the Red Army. In the Navy, in a similar situation, they say: "Smoke - into the chimney, firewood - into the source." After the sensational victories of the German tank groups in the Soviet Union, they decided to correct the mistake and set about creating eight mechanized monsters designed to "deeply shock the enemy's front." Each of them was to consist of two tank and one mechanized divisions, a separate motorcycle regiment, a road battalion and a communications battalion. The full staff of the mechanized corps of the new organization, approved by the decree of the Council of People's Commissars of the USSR of July 6, consisted of 36,080 people, 1,031 tanks (including 126 heavy, 420 medium, 108 chemical), 268 armored vehicles, 100 field guns and howitzers, 36 anti-tank and 36 anti-aircraft guns, 186 mortars, 4,700 machine guns, 5,161 vehicles, 1,679 motorcycles, 352 tractors and so on, so on, so on. The huge number of armored vehicles did not make them more combat-ready, but, on the contrary, made it even more difficult to supply and manage. But if in the fall of 1939 our army commanders and commanders were not able to manage a corps of 560 tanks, now they instantly "learned".

And where can you go if Comrade Stalin summoned to the Kremlin the Chief of the General Staff, together with his first deputy I.V. Smorodinov and asked: "Why are there no mechanized and tank corps in our army? The experience of the war of the Nazi army in Poland and

in the West shows their value in battle. We need to immediately consider this issue and form several corps in which there would be 1000-1200 tanks. Consider this issue and give an offer as soon as possible. Naturally, the proposals corresponded to the wishes of the Leader.

"Such a formulation of the question caused bewilderment," recalls Marshal M.V. Zakharov. - Apparently, it was advisable to report to I.V. Stalin about the existing regular organization of the mechanized corps and ask for his permission, based on the calculations and the plan for receipts from the tank industry, to re-form the mechanized corps in relation to the previously existing organizational structure, in which, perhaps, it would be advisable to make only some changes.

I.V. Smorodinov said that he could not discuss this issue, since Stalin's instructions had been received - to have a mechanized corps consisting of two tank and one motorized rifle divisions in the likeness of

German Corps, and in tank regiments have at least two hundred tanks.

To develop the organizational and staffing structure, I suggested commander D.G. Pavlova. Let him now prove that the commander of a tank regiment will be able to manage a unit, which will include two hundred tanks.

19 tank brigades, two T-26 tank regiments and tank battalions of rifle divisions were assigned to form new corps.

In October, on the basis of "Considerations on the fundamentals of the strategic deployment of the Armed Forces of the Soviet Union" under the leadership of the new Chief of the General Staff K.A. Meretskov, a 1941 mobilization plan was developed. Regarding the armored forces, the plan provided for the deployment of 18 tank and 8 mechanized divisions in wartime. That is, it was supposed to have 8 mechanized corps, plus the 6th and 9th separate tank divisions.

Additionally, it was planned to form 2 directorates of mechanized corps, 4 tank and 2 mechanized divisions during the first three months of the war. In addition, on mobilization, it was planned to deploy 5 separate BT tank brigades, 20 T-26 brigades and 3 separate armored brigades.

Six "peacetime" corps were to be deployed in the western border districts, one - on the border with Mongolia and Manchuria, one - in the Moscow region; separate tank divisions - in Transcaucasia and Central Asia.

In November, "above the plan" in the Kiev Special Military District, the 9th mechanized corps was formed.

And this option was fully provided with available materiel, command and rank and file. However, there is no limit to perfection.

From December 23 to December 30, 1940, a meeting of the Main Military Council was held in Moscow, which was led by People's Commissar of Defense S.K. Timoshenko. Commanders, members of military councils and chiefs of staff of military districts, army commanders, heads of main and central departments and commanders of some corps and divisions were invited to the meeting - in total more than 270 military leaders of the highest ranks. In order to summarize the experience of recent conflicts and, as Marshal S.M. Budyonny, "eliminate inconsistency in

operational thought and develop a unified school of operational thinking", a number of reports were read and discussed. For the brains of our military leaders were completely powdered by the "rogues", now, thank the Great Stalin, neutralized, "who confused our good deeds with malicious intent", and therefore "questions wandered without control, and each person could speak in his own way". One of the main speakers was the commander of the troops of the Kyiv Special Military District, General of the Army G.K. Zhukov. In his speech, he analyzed the nature of the "modern offensive operation", gave the calculation of forces and drew conclusions:

"A modern offensive operation can count on success only if the blow is delivered in several

decisive directions, to the entire depth of the operational formation, with the deployment of large mobile forces on the flank and rear of the main enemy grouping. Simultaneously with offensive and auxiliary strikes on decisive axes, the enemy must be demoralized on the widest possible front. Only such an offensive operation can in a relatively short time lead to the encirclement and defeat of the bulk of the enemy forces on the entire front of the offensive being undertaken ...

The power of the first strike should ensure the defeat of at least one third - one second of all enemy forces and bring our forces to such an operational depth from which a real threat of encirclement of the remaining enemy forces would be created ...

It is quite legitimate to expect that the initial initial operations are likely to begin with frontal strikes. The problem of the offensive will be to first break through the enemy's front, form the flanks, and then, in the second phase, move on to extensive maneuvering operations. Conditions for operational bypass, envelopment and strikes on the flanks will be created during the offensive operation itself.

To conduct a major offensive operation with a strategic goal on a front of 400-450 km, 85-100 rifle divisions, 4-5 mechanized, 2-3 cavalry corps and 30-35 aviation divisions will be required. In the decisive direction, shock armies should operate in the following composition: 4-5 rifle corps (12-15 divisions), up to 7-9 artillery regiments of the RGK (750 guns), 3-5 tank brigades (700-1200 tanks), 2-3 air divisions (600-700 aircraft), engineering and chemical units, mechanized or cavalry corps as a mobile group.

In theory, the process of breaking through the enemy defenses looked inevitable, like the death of all world capital: "After a powerful artillery raid and an air force strike on the front line of the enemy's defense, having reconnaissance ahead, the first echelon of heavy tanks should break in and, not stopping at the front line, rush non-stop on reserves, enemy artillery and command posts, breaking all communication lines in its path and destroying anti-tank guns. The movement of this echelon is supported by a barrage of fire and aviation actions. Under the cover of an echelon of heavy tanks, an echelon of light tanks passes through the front line with the task of destroying the machine-gun fire system behind the reverse ramps. Behind this echelon, an echelon rushes to the forefront

flamethrower tanks and, by its actions, helps the infantry to carry out devastating bayonet strikes.

The duty of the "great commanders" is to comprehensively "prepare for the crushing, annihilating and organized actions of our army, regardless of the conditions (maneuvering, positional or other nature) our army will be placed in."

The meeting approved the report as a whole. True, the commander of the 1st mechanized corps, Lieutenant General P.L. Romanenko considered the shock armies proposed by Zhukov not "shock" enough and suggested that each front (district) have a pair

mechanized aviation monsters Consisting of 4-5 mechanized, 3-4 aviation corps, 1-2 airborne divisions and 9-12 artillery regiments. Chief of staff

Baltic Military District Lieutenant General P.S. Klenov pointed out that the theoretical research of Zhukov (more precisely, the operational department of the headquarters of the KOVO) is in no way tied to the enemy and the specific situation, and that the issue of conducting offensive operations in the initial period of the war requires special consideration:

"I take the example when this offensive operation begins in the initial period of the war, and the question involuntarily arises of how the enemy will influence during this period measures related to strategic deployment, i.e., mobilization, supply of mobile resources by rail, concentration and deployment of troops. This initial period of the war will be the most responsible from the point of view of the enemy's influence on preventing it from being carried out systematically ... Every self-respecting state, of course, will try to use this initial period in its own interests in order to find out what the enemy is doing how he groups, what his intentions are, and to prevent him from doing so. In order to prevent the enemy from preventing the Red Army from deploying and lining up according to the planned disposition, it is necessary to "influence" the enemy first: "These will be operations of the initial period, when the enemy armies have not yet completed their concentration and are not ready for deployment. These are invasion operations to solve a number of special tasks. This is the influence of large aviation and, perhaps, mechanized forces, until the enemy has prepared for decisive actions, on his mobilization, concentration and deployment in order to disrupt them, carry the concentration deep into the territory, and delay time. This type of operation will, of course, have a special character..."

It is quite natural that it is necessary to warn the enemy of the readiness of such means for carrying out operations as aviation and mechanized units in terms of their deployment and quantity. The organization and conduct of such operations will ensure air supremacy, will not allow the enemy to mobilize, and will complicate his deployment.

The essence of the matter was that our commanders had not yet really decided how best and more correctly to "strike back the aggressor": to mobilize and go on a decisive offensive, or the mobilization process should be ensured by "offensive operations of special armies, of course, on foreign territory. At the end

in the end, they decided that it was unrealistic to gather all the forces unnoticed by the enemy, and settled on the second option - the Great Liberation Campaign in Europe would begin with an attack by "cover armies" reinforced by mechanized corps.

On December 28, Colonel-General D.G. Pavlov. Taking the example of Operation First

world war, he told listeners that "tanks not only increased penetration, not only increased the impact," but, in addition, "dramatically reduced the work of artillery, sharply reduced the consumption of shells." The general explained the successes of the Germans in the fields of Poland and France by the presence of motorized and tank formations, which broke away from the infantry for 2-5 days and, not meeting a particularly strong defense, broke through in depth, reaching operational goals. Therefore, we need to continue to create mechanized corps in our country.

If three months ago Dmitry Grigorievich considered the 500-tank corps uncontrollable, unnecessary and even harmful, now he infected everyone with enthusiasm. There is nothing difficult in managing the actions of a mechanized corps in 1300 combat vehicles, Pavlov assured: "In fact, the operation to introduce a mechanized corps into a breakthrough is not difficult, it only requires the command to have excellent knowledge of the issues of interaction between all branches of the armed forces and the ability to practically carry out this interaction."

That's it! Knowledge and skills! General Pavlov, who had never carried out this very interaction in practice, uncomplicatedly believed that there was "no reception" against such scrap, he was already ready to "shake the fronts": to concentrate ten thousand tanks into a "ramming mass" (it is desirable to put something in the head of an armored column) something absolutely impenetrable) and indicate to her the general direction of movement: "To Berlin!" He had already estimated that even one mechanized corps, "destroying everything in its path", would be able to independently break into the enemy defenses on a front of 12 km and, inflicting a series of blows, successively defeat 1-2 tank or 4-5 infantry divisions of the enemy. Entering a cavalry-mechanized group or a tank army into a breakthrough is also a simple matter and is not much different from entering a single tank corps into a breakthrough: "The difference will be in the scale, width of the breakthrough front, in the depth of the formation of battle formations and in larger operational tasks." The main thing is that it is necessary to enter early in the morning and at a fast pace in order to have time to reach the operational space by evening, otherwise the enemy can pull up reserves overnight and "create strong minefields".

Pavlov paid special attention to the preparatory stage of the operation, which took 2-3 days. He said many correct words about the need for a clear statement of tasks, thorough reconnaissance with the involvement of aviation and all technical means, study of the terrain, organization of interaction and continuous communications, secrecy and camouflage: "The first stage covers such a large amount of questions, requires such a practical resolution of these issues and is so important that without it it is completely unthinkable to carry out the responsible second stage, i.e., the actual entry of the hull into the breakthrough. It is a pity that when it came to the real case, Dmitry Grigorievich did not succeed. Firstly, the enemy interfered, and secondly,

report faded from memory.

In the debate, most of the speakers in different ways developed the idea that there should be as many such powerful corps as possible.

Thus, according to the views of the Soviet military leadership, the mechanized corps were the main strike means of the ground forces. The corps were supposed to be used in the offensive as mobile groups to develop the offensive to a greater depth. They had to be introduced into the breakthrough made

rifle troops, or independently break through the enemy's weak defenses, and then, together with the airborne troops, with the support of aviation, develop a tactical breakthrough into a strategic one. The main tasks of the mechanized corps during operations in the operational depth were to defeat the enemy's reserves, and first of all his mobile formations, disrupt control and demoralize the entire rear of enemy troops in this direction, capture important lines and objects, the mastery of which ensures the fastest achievement of the goal of the operation.

At the same time, Soviet strategists pretended that the Germans did not surprise them with anything special, and they adopted the tactics of using mechanical connections from us: "The Germans did not come up with anything new. They took what we had, improved it a bit and applied it." General G.K. Zhukov, after Khalkhin Gol, became a great military commander, on a report summarizing the experience of the French campaign, inscribed with an unwavering hand: "I don't need this."

Report of the Commander of the Moscow Military District, General of the Army I.V. Tyulenev was devoted to the nuances of organizing an army defensive operation, the possibility of which was still allowed in certain secondary directions, but even in this case, "the nature of the actions of the defense forces must be imbued with the idea of an offensive." As the most striking example of an active defensive operation, the general cited the defense of Tsaritsyn, "which was led by the great Stalin." However, Tyulenev said the most important thing at the beginning: "... we do not have a modern substantiated theory of defense, which could be opposed to the modern theory and practice of a deep military offensive operation." Is it possible to place a "free mechanized corps" in the operational depth, using it to launch counterattacks on the enemy groupings that have broken through.

The question of strategic defense or defensive actions on the scale of the front was not even raised. After all, Comrade Stalin himself planned history, and the attack of Germany (there were no other potential opponents in Europe by that time) on the USSR was not envisaged in these plans.

In the operational games that followed the meeting on the maps, breakthroughs and coverage were practiced on the lands of southern Poland and East Prussia.

Stalin, who closely followed the course of "scientific research", choosing his "Hindenburgs", clearly outlined his preferences: Pavlov received the rank of army general, Zhukov - a strong division commander with three classes of a parochial school, who organically hated staff work, considered a topographic map a plane, on which it is convenient to draw plans for crushing blows,

was appointed Chief of the General Staff.

In the first half of February, Georgy Konstantinovich presented to the government a new mobilization deployment scheme, which received the name Mobplan No. 23. Its development was due to the fact that, according to the existing mobilization plan, troops had already been deployed both during partial mobilization in seven military districts in September 1939, and during an undeclared war with



Finland. A significant number of troops moved to the Baltic States, to the western regions of Ukraine, Belarus and Moldova, and these are new borders, territories, resources, conscripts. Among other things, "taking into account the number of tanks in the German army" (?), The plan provided for the deployment of another 21 mechanized corps. In addition, cavalry divisions relied on tank regiments, and airborne corps - separate tank battalions. To support all these formations, Timoshenko and Zhukov requested 36,879 tanks, 10,679 armored vehicles and a million tankers!

And so 16.6 thousand tanks of "only new types" were born, which were not enough to defeat the German right on the border.

After the war, in order to further confuse the layman, historians undertook to show the monstrous, incomparable with any army in the world, the amount of Soviet weapons as a percentage of an unfulfilled dream: "Most of the mechanized corps did not have the necessary amount of weapons and military equipment. By mid-June, the staffing of the corps of the border military districts by mid-June with all types of combat vehicles by the beginning of the war averaged 153%, cars - 39%, tractors - 44%, repair equipment - 29%, motorcycles - 17%. A significant part of the equipment needed medium and major repairs. For example, if in one German division there were 150 tanks, and in another 200, then both of them were fully equipped, everything was in order with the Fritz, the last Hans sewed the last button to his uniform. In a motorized division, even more so, since it was not supposed to have tanks or tractors at all, which gave it 100 percent staffing. About the Soviet tank (and mechanized) division, which, according to the above "average temperature in the hospital", on June 22, 1941 also had 200 "boxes", we can say that it is only half staffed, and the second half is outdated and broken. Two Konstantinovs would write an application for 100 thousand tanks, there would still be a shortage

more significant.

Marshal Zakharov blames in his memoirs that they didn't need so much at once: "It would be more expedient, based on the available tanks and the production capabilities of the industry, not to set the task of forming 29 mechanized corps (it was decided to abandon one. - Auth.) By June 1, 1941, but to draw up a real plan for the consistent formation of mechanized corps for each year, depending on the receipt of tanks from industry. This was a major miscalculation of the General Staff in planning the formation of mechanized corps. Yes, and Zhukov himself admits his personal inability to link mobilization ambitions with the country's economic capabilities, well, he reported something to the Kremlin from a lantern. True, Georgy Konstantinovich writes about himself in encrypted form and in the third person: "The General Staff developed ... the military demanded and did not take into account ... we did not calculate ..."

Comrade Stalin, who knew every enterprise and every director, personally brought them planned and overplanned buildings, believed unconditionally in the possibilities of Soviet industry and approved Mobplan No. 23. In 1941, it was planned to produce 5.5 thousand tanks in addition to the 22 thousand already available. And this is "in peacetime, within the framework of a peace-loving, not a paramilitary state." And "if the enemy imposes a war on us, if the dark force comes on," the created industrial base made it possible to fully equip 29 mechanized corps within one year.

However, no one thought to equip them at the same time. First, organizational structures were created, commanders were appointed, then there was a consistent planned filling of people and equipment. First of all - the formations of the "first nine" and the Baltic military district that arose after the "people's democratic revolutions" (8322 tanks were assembled in them), then - the second-echelon corps and the reduced corps. The latter, instead of tanks, temporarily received an additional 200 anti-tank guns and could be used "for defense as anti-tank units." Such "anti-tank corps" were, for example, the 17th and 20th Western OVO.

Hitler, who launched the Barbarossa project, also wanted to have more mobile units for greater certainty, but there was not enough equipment even taking into account the captured materiel. The doubling of the number of tank divisions from 10 to 20 requested by the Fuhrer was achieved by "division" - the withdrawal of one tank regiment and its transfer to the newly formed divisions; in return, a second motorized regiment was given. The number of tanks in divisions was reduced to 147-209 units. In addition, it had 24 light howitzers of 105 mm caliber, 16 artillery systems of 150 mm caliber, 20 75 mm guns, 30 81 mm mortars, 200 tractors, 1275 vehicles, 13,700 people. 17 such divisions took part in the "treacherous attack".

By the beginning of the war, not one of the Soviet mechanized corps had grown to a full staff, was not fully provided with combat vehicles, especially new types, and part of the tractors and cars had to come from the national economy with the start of mobilization. But still, in the 1st mechanized corps, 1039 tanks were in service, in the 3rd - 672, in the 4th - 979, in the 5th - 1070, in the 6th - 1131, in the 7th - 959, in the 8th - 899...

The average of the 20 "unmanned corps" that took part in the fighting in the first weeks of the war had about 600 tanks, 142 armored vehicles, 20 122 mm howitzers, 18 152 mm howitzers, 12 "three-inch", 24 82 mm mortars and 22,500

personnel person.

The situation with road transport was similar: I would like to have 595 thousand cars by the day "M", but received only 507 thousand - 1673 cars for each division with a staff of 1360 in the tank and 1587 in the mechanized (by the way, when Timoshenko himself took care of Voroshilov, then he called "inflated norms for providing troops" as the reason for the shortage of vehicles). Of course, the stock pocket does not pull. But the Germans did a little better with this technique, there, too, the bulk of the vehicles were vehicles seized from the National Socialist economy, and various trophies collected across Europe:

"The situation with equipping the troops with vehicles was alarming. Any satisfactory solution to this problem proved impossible. Difficulties were predetermined not only by the quantitative shortage of motor vehicles, but also by their low degree of suitability for use in the troops and their significant diversity, which made it extremely difficult to produce spare parts and supply them to the troops. Because of this, it was still very often necessary to resort to horse traction. As a temporary way out, trophy cars began to be used in large numbers, which, however, is even more

hampered vehicle repairs. In addition, vehicles from French automobile factories were used in significant quantities. But this also could not solve the problem, since French cars, as a rule, did not meet the requirements that were imposed on motor vehicles by roads in the East. Captured and French cars were equipped with the 20th tank, 3rd, 14th, 18th motorized divisions. Moreover, Müller-Gillebrand describes the situation until the moment when the Wehrmacht crossed the Soviet border and in practice found out how the "roads in the East" differ from the roads in Belgium.

(However, the German soldiers did not lose heart, but used to the fullest what the Fuhrer and the German people gave them: "A characteristic feature of the action of German tanks is the transportation of anti-tank guns on a trailer by many vehicles. support the tank attack, playing the role of tank support guns.")

There really were no motorcycles, a motorcycle regiment was driven into the Soviet state so that it would be no worse than the Germans, without even understanding what it could be used for. So, Major General V.M. Potapov, who commanded the 4th mechanized corps, spoke something like this: "I thought about this issue for a long time, I don't know ... it seems to me that in general it's impossible to find the right use for a motorcycle regiment anywhere." Our generals did not attach importance to reconnaissance at all, therefore they demanded that any equipment carry something armored and large-caliber firing, which is why Potapov was perplexed why he needed a motorcycle regiment that had no artillery, "has only motorcycles with a machine gun."

Even in the "out of order" Soviet armored forces outnumbered the Panzerwaffe wholesale and retail. The most powerful mechanized corps, which were part of the covering armies, huddled in the Lvov and Bialystok "balconies" - convenient springboards for an attack on Krakow, Warsaw, Allenstein. The contrast was especially striking in the Ukraine, where five German Panzer divisions (728 tanks) were to face ten mechanized corps (5,826 tanks).

In the first half of May 1941, when a large-scale transfer of Soviet troops from the interior of the country to the West began in the deepest secrecy, Marshal S.K. Timoshenko ordered the commanders of the border districts to develop a "detailed plan for the defense of the state border" in case the enemy tried to interfere with the mobilization, concentration and deployment of the Red Army. The mechanized corps, according to the guidelines, was to be used to eliminate breakthroughs of large

mechanized units of the enemy: "The task of the mechanized corps is to deploy under the cover of anti-tank brigades, with powerful flank and concentric strikes, together with aviation, inflict a final defeat on the enemy's mechanized units and eliminate the breakthrough." Well, under favorable conditions, "to be ready, at the direction of the High Command, to deliver swift strikes." Within a month, the work was completed: plans were developed, calculations were made, reconnaissance was carried out, the most tank-dangerous directions were determined, cut-off and rear positions were selected, a warning system was agreed, "red packets" were laid in the safes, which were allowed

open only on command from Moscow. Given the fact that the Abwehr did not hear anything about the Soviet mechanized corps (or heard, but did not report, or reported, but did not listen to him), did not notice the KV and T-34 defiling across Red Square at the May Day parade, and generally believed that The Red Army has only 6,000 tanks in service, distributed among rifle divisions, the adversary was in for a big surprise.

However, the headquarters of the fronts never received the telegram: "Proceed to implement the cover plan of 1941." Instead, the incomprehensible Directive No. 1 followed, and then the surprises began ...

As it was in the report of G.K. Zhukov?

"Poland was not ready for war, not only in terms of covering its state borders, encircling them with appropriate fortifications, but it was not even ready to manage, organize and conduct a modern operation. At the very first blow, the main command, the command of all the highest echelons, was confused and, as a result, an embarrassment turned out. Very accurate definition!

In Ukraine, in just 15 days, five tank divisions, "delivering a series of blows" - right on Pavlov, - successively defeated ten mechanized corps. At the same time, Soviet losses amounted to 4381 tanks - 292 vehicles daily! In Belarus, 4,799 tanks turned into scrap metal in 18 days, and 2,523 in the Baltic States.

By the end of 1941, the Red Army had lost 20,500 tanks. During the same period, 2,785 tanks and 144 assault guns were irretrievably out of action for the Germans.

Citizens! Yes, how is this possible?

One involuntarily wants to repeat after Yu.P. Kostenko: "How mediocre it was necessary to use this formidable weapon in order to lose it in such quantities?"

#### Chapter 4

Here is the time to remember V.K. Triandafillov, who wrote as early as 1929: "Our study ... categorically raises the question of means of suppression, means of escorting infantry in battle, in particular, tanks. It raises questions of the importance of vehicles for the modern armed forces, questions of the railroad. equipment, motorization of the army. And for all that, it puts questions of the quality of the troops in the most important place. All this equipment, which is or will be in service, can fall into the hands of the enemy if proper training and combat

training, proper command and control, proper political and moral condition of the army, proper quality of the troops.

In the 1930s, the Red Army for the most part was illiterate, poorly trained, hating Soviet power and doing anything but military affairs. Has anything changed in the army since

the past decade of socialist construction, "great victories", records and bloody purges? Basically, nothing. The educational level of mid-level commanders has increased (slightly) and the saturation of troops with equipment (many times). On the other hand, the scale of the mess and self-satisfied ignorance of the updated leadership increased, the initiative and the desire to think independently were killed. They definitely drank more. The list of enemies of Soviet power was supplemented by "happy" Lithuanians, Ukrainians, Moldavians, Poles ... They were re-educated at an accelerated pace, sparing no cartridges, barbed wire, Stolypin wagons and an ardent commissar's word. But history, as everyone knows, gave the Bolshevik party and its shock detachment - the NKVD - "too little time", and in the initial period of the "Holy War" the Soviet troops had to operate in hostile territory, having in their ranks conscripts who did not hesitate to shoot in the back to their commanders and who went over to the side of the enemy en masse.

In the state of combat training, there were no special shifts either.

Based on the results of receiving cases from the dismissed K.E. Voroshilov, the new people's commissar of defense drew up a devastating "Act on the reception of the People's Commissariat of Defense of the USSR", which, in particular, stated:

"The quality of command staff training is low, especially at the platoon-company level, in which up to 68 percent have only a short-term 6-month training course junior lieutenant.

The training of commanders in military schools is unsatisfactory, due to the poor quality of the programs, the lack of organization of classes, insufficient loading of study time, and especially weak field practical training. The improvement of the command staff of the cadre is not properly organized ...

Combat training of troops has major shortcomings. The orders on the tasks of combat training issued annually by the people's commissar for a number of years repeated the same tasks that were never fully carried out, and those who did not comply with the order remained unpunished. Military discipline is not up to the mark and does not ensure the exact fulfillment by the troops of the combat missions assigned to them.

Even the actual number of armed forces could not be established, due to "exceptionally neglected records." Having rolled up his sleeves, the People's Commissar zealously set about raising the combat readiness of his subordinates.

Tymoshenko's Order No. 120 of May 16, 1940, on the combat training of troops for the summer period, demanded a radical restructuring of it: "Teach the troops only what is needed in the war, and only in the way that is done in the war." But although on July 15 disciplinary battalions were restored in the Red Army (the solution of all problems in the Soviet country began with the strengthening of discipline, this usually ended), things did not get better from this.

At the glorious December meeting of the command staff, Semyon

Konstantinovich, summing up the results of the academic year, said: "On the whole, fire training did not give the proper growth and is assessed poorly."

Head of the Combat Training Directorate, Lieutenant General V.N. Kurdyumov called the main reasons for this situation: the lack of leadership and control on the part of senior commanders and their headquarters; a significant detachment of personnel for chores, defensive construction and guard duty, escort and protection of cargo; systematic non-fulfillment of curricula "in all military districts inspected"; constant breakdowns and transfers of classes in most formations and units. None of the commanders was punished for these omissions, idlers and ignoramuses, according to the established Soviet tradition, were sent for promotion.

There were both achievements:

"Initial successes have been achieved in organizing the interaction of military branches on the ground. Artillery, tank units, aviation, engineering and chemical units in all military districts have gained a lot of experience in joint operations with infantry in offensive and defensive combat, "-

as well as some shortcomings:

"The overcoming of large water barriers (by reinforced rifle and cavalry regiments and divisions) was carried out in military districts only in some divisions. The troops do not know how to organize and conduct reconnaissance, provide flanks and joints, defend and attack SD, defend and overcome large water barriers.

"Greater experience in joint operations" should not be exaggerated either, since, according to Army General K.A. Meretskov, this experience only confirmed the inability to organize the interaction of infantry and tanks, "some of the tanks lag behind during the attack, while others are far ahead, as a result of which the interaction of tanks with infantry on the battlefield does not work."

During the autumn inspection, only a few units were able to receive a positive assessment. For example, in the Western Special District, out of 54 units tested for firepower, only three received a positive assessment, in the Leningrad District - only five out of 30. The same picture was observed in other military districts. The commanders saw the main reason for all the shortcomings in the low qualifications of the vast majority of the command staff of the Red Army, excluding, of course, themselves.

Head of the Main Armored Directorate, Lieutenant General Ya.N. Fedorenko told about the order in the tank troops. He noted that the mechanized and tank formations, having spent a lot of time and motor resources, learned how to make marches well, but did not have time to work out a number of issues such as the ability to shoot, knowledge of the materiel, the ability to establish communications and conduct reconnaissance:

"Mechanized formations have not yet worked out interactions within themselves, they have not worked out interactions even with motorized infantry and artillery, which are part of mechanized corps and divisions. In this regard, there are only attempts. This year, the corps and divisions worked out the issues of entering a breakthrough and an offensive, but this is only an introduction, there is still no combat interaction and cohesion in these matters. And this question remained this year

unfinished.

One of the types of combat training - raising and leaving on alarm - also remained unfinished. Raising an alarm connection showed that when you drive 30-40 km from the location of the unit, you need to drive back for five days and pick up what you need, but not taken, and take back what was taken, but unnecessary.

You need to calculate in advance what the car should carry. When checking out the cars, it turned out that all the cars, as a rule, are underloaded by 300-500 kg, and there are cars that can hold 3 tons, and one ton is loaded onto them. As a result, the commanders say that there are not enough cars. It is necessary in advance, even in peacetime, to calculate what to load for each car, how much to load, and then our rear will turn out to be much smaller and there will be a lot of superfluous cars instead of a shortage. (That is, to prescribe in advance what and how much to take into the truck, to distinguish and separate what is necessary for battle from unnecessary junk - an impossible task for the red commanders! How can Zhukov correlate mobilization requests with the capabilities of industry. General Pavlov noted one more, as he put it, The "great sin" of the command staff: they do not read the map well and often "mix up the routes." - Auth.)

It must be said that our home front preparation is poor, this issue remains unfinished. As many people remain in the rear as they go into battle, and sometimes more. In fact, it turns out that these people are not organized into companies or platoons for the defense of the rear, there are a lot of people left ...

Driving in convoys of transport vehicles, communications, reconnaissance remain unfinished, and especially with reconnaissance and orientation. You let the tank go on reconnaissance, it will pass around the forest, the swamp, the crew will come out and do not know where the south is, where the north (!). We need to teach the crew to understand the map.

Commander of the 132nd Rifle Division, Major General S.S. Biryuzov shared his impressions of the field trip to the Kiev district, paying special attention to the fact that while during the preparation of the operation, command and control of troops "can still be called satisfactory", then in dynamics "a completely different picture is obtained."

Command personnel for the armored forces were trained by the Military Academy of Mechanization and Motorization (VAMM) in Moscow and one-year courses with it, and the middle and technical command staff was trained by a network of two-year educational institutions. By 1941, it included the Frunze Oryol, 1st Kharkov, 1st and 2nd Saratov, 1st Ulyanovsk tank, Kiev tank technical, Pushkin autotechnical, Gorky auto-motorcycle, Poltava tractor schools. The level of training of the specialists they graduate was determined by the "customer" as unsatisfactory, "due to the poor quality of the programs, the lack of organization of classes, insufficient workload and especially weak field training." Special disciplines were taught in classrooms without practical training; in the fresh air, tank cadets mastered the drill step, crawling, bayonet and hand-to-hand combat, and rifle platoon tactics. The organization of military branches, for reasons of secrecy, was studied in abstract "training states". The enemy's technique, its characteristics, weaknesses and strengths were not studied at all, although, it would seem, what could be simpler, all of it was bought up and taken apart to the screw. The experience of foreign armies was recommended to be studied with extreme caution in order to avoid

"exaggerations and admiration for the successes of these armies", that is, it was safer for health not to be interested in such issues at all.

Half of the personnel of tank and mechanized formations carried out guard duty, the second half built and repaired something. But you never know what a military man has to do: political events, patrol service and galley outfits, garbage collection and whitewashing curbs, painting grass and destroying dandelions, building dachas and caring for general swans, developing virgin lands and building towns. And how much effort was spent on the design of Lenin's rooms and the production of countless monotonous posters "Learn military science in a real way" and "Remember the war."

But to work out eight fire missions, 6 shells per year were allocated to the tank, although, according to experts, "in order to prepare the crew, it is necessary to shoot at least the following tasks for the tank commander: firing from a place (one task requires 3 shells); shooting from short stops (one task requires 3 projectiles); shooting from the move (one task requires 4 projectiles); shooting as part of a platoon (one task requires 3 shells); shooting as part of a company (one task requires 3 rounds). This is without any inspections. Thus, to train only the tank commander, 16 shells are required. Tower shooters basically need to be taught to shoot a bullet according to the cannon scale, but it would be nice to give the tower shooter one shooting from a place - 3 shells. 1.5-2 hours were allotted for the practical training of the driver - they took care of the fuel.

In a word, if you suddenly decided to replace Marshal Timoshenko back with Marshal Voroshilov, you don't need to compose a new "Acceptance Act", you can quote the previous one word for word: tasks that have never been COMPLETELY PERFORMED.

No matter how much they struggled with this problem before the war and after, they could not solve it. Such a "peace-loving nation" was the Soviet people.

Therefore, the decision of the Soviet leadership to form gigantic mechanized corps, and even in such numbers, is so surprising. The new generation of Stalinist nominees did not shine with special knowledge, general education, as a rule, was limited to elementary school, abstract thinking was completely absent, and most of the "big bosses" had minimal experience in managing military formations. Colonel I.Kh. It was not without reason that Bagramyan wrote in the Zhukovsky report:

"In order to successfully conduct modern offensive operations, it is necessary to have well-trained troops, commanders and staffs. Today's rapidly evolving operations require exceptional coherence, agility and flexibility. Troops that do not have these abilities cannot count on success. Particularly high demands must be placed on the commanders and headquarters of higher formations.

So it's all about us!



The idea of mass deployment of mechanized corps only exacerbated the chaos. The rotation of people and equipment led to a decrease in the combat readiness of already established and cohesive units and formations. confusion

gave rise to a constantly changing order of subordination of tank units. Due to the lack of combat vehicles, they had to be taken from the tank battalions of rifle divisions and tank regiments of cavalry divisions. The explosive growth of armored forces caused a shortage of command personnel and trained tankers. Personnel were hastily retrained from other branches of the military, which did not have the best effect on the level

newly minted crews who received meager practice in operating tanks. In February - March 1941, the following were additionally deployed:

Kazan, Syzran, Chkalovsk, 2nd Ulyanovsk, 3rd Saratov tank, Ordzhonikidze grad auto-motorcycle, Kamyshin tractor schools. For the improvement of command personnel, the Leningrad Red Banner Armored Improvement Courses for Command Personnel (LK BTKUKS), Kazan Advanced Courses for the Military-Technical Staff of the Red Army, and Kharkov KUKS of the Reserve of Tank Forces operated. But, despite all efforts, the problem of command and technical personnel was very acute. In many headquarters, even the leading departments, including operational and intelligence departments, remained understaffed.

It was not possible to organize combat coordination of units and subunits. The diversity of the tank fleet caused a lot of trouble. Part of the machines was discontinued, they stopped producing spare parts. The new tanks that entered the troops were poorly mastered by the personnel. It was allowed to study them, let alone operate them, only in special training units, to a very limited extent, since the machines were not only new, but also secret. The situation was aggravated by the fact that in order to use the KV and T-34, it was necessary to re-establish the entire supply system, provide diesel fuel and three-inch shells. For example, it was not possible to accumulate a stock of armor-piercing 76-mm rounds for tank guns.

As time went on, the quantity of armored vehicles produced and put into service did not turn into quality. Then the war began. It did not start at all as planned, and not as dreamed of. Marshal A.M. gracefully put it. Vasilevsky: The Red Army was "not quite ready for war yet."

"What happened on June 22 was not foreseen by any plans," recalls Marshal K.K. Rokossovsky, who commanded the 9th mechanized corps, - therefore, the troops were taken by surprise in the full sense of the word. The loss of contact between the district headquarters and the troops aggravated the difficult situation. Good tank cadres died in an unequal battle, selflessly fulfilling the role of infantry in battles. Even when the directions of the main attacks delivered by the German troops, as well as their grouping and forces, were clearly established, the district command was unable to take responsibility and make a cardinal decision to save the situation, to save most of the troops from complete defeat ... "

Zhukov explains his "embarrassment" with Tymoshenko simply - they didn't think: "A sudden transition to the offensive with all available forces, moreover, deployed in advance in all strategic directions, was not foreseen. Neither the People's Commissar, nor I, nor my predecessors B.M. Shaposhnikov, K.A. Meretskov, nor the leadership of the General Staff did not expect that the enemy would concentrate such a mass of armored and

motorized troops and will abandon them on the very first day in compact groupings in all strategic directions.

This was not taken into account and our commanders and troops of the border military districts were not ready for this. True, it cannot be said that all this generally fell on us like snow on our heads. Of course, we studied the combat practice of the Nazi troops in Poland, France and other European countries and even discussed the motives and methods of their actions. But everyone really felt this only when the enemy attacked our country, throwing their compact armored and aviation groupings against the troops of the border military districts ...

All of us, including as Chief of the General Staff, did not take into account on the eve of the war the possibility of such a sudden invasion of our country by fascist Germany, although there was already an experience of this kind in the West at the beginning of World War II.

How Zhukov "studied the combat practice of the Nazi troops," we already know.

A year before the start of the war, the last book of the brilliant G.S. Isserson "New Forms of Struggle", in which, summarizing the experience of the German-Polish war, he came to the conclusion:

"War is not declared at all. It simply begins with pre-deployed military forces. Mobilization and concentration do not belong to the period after the onset of the state of war, as was the case in 1914, but imperceptibly, gradually carried out long before that. Of course, it is impossible to completely hide it. Concentration becomes known in one measure or another. However, from the threat of war to the entry into war, there is always one more step. It gives rise to doubt whether a real military action is being prepared or is it just a threat. And while one side remains in this doubt, the other, having firmly decided to act, continues to concentrate, until, finally, a huge armed force is deployed on the border. After that, it remains only to give a signal, and the war immediately breaks out in its full scale.

Some of the Soviet generals even read this work, but the same P.S. Klenov, who was in charge of the defense of the Baltic states, but instead was preparing to liberate East Prussia from the Germans, called the author's conclusions hasty. "Such a 'trick' could have been carried out by the Germans only with Poland, which, arrogantly, had lost all vigilance and which had no intelligence of what the Germans were doing during the months-long concentration of troops."

The fact that Isserson was as clear as a simple gamut seemed to the leadership of the General Staff to be something completely unbelievable. Well, still, after all, according to the firm conviction of the Marshal of Victory, it was in the old tsarist army that the General Staff was the "brain of the army"; the brain of the Red Army was in the Central Committee of the Bolshevik Party, more precisely, in a brilliant

the head of Comrade Stalin, who gave the military a firm statement that Hitler would not dare to attack the Soviet Union until he dealt with England. That is why Isserson did not get into the "leading staff" of the General Staff, and after the publication of his pamphlet he was dismissed from the army, then imprisoned and sentenced to death with the replacement of the "tower" for 10 years in the camps.

Everything repeated exactly. The word "Polish" in Isserson's book can be easily changed to "Soviet", Danzig - to Ukraine, and

get a complete picture of the summer defeat of 1941:

Thus began the German-Polish war. It revealed a completely new character of entry into the modern war, and this was, in fact, the main strategic surprise for the Poles. Only the fact of open hostilities finally resolved the doubts of the Polish politicians, who provoked the war most of all by their arrogance, but at the same time were most of all taken by surprise.

The Polish command also made strategic mistakes and miscalculations that cannot be made directly dependent solely on the internal political rottenness of the former Polish state.

They are rooted in a striking lack of understanding of the new conditions under which entry into modern warfare can take place.

In this regard, the war was lost primarily by the Polish General Staff, which set an example of a monstrous misunderstanding of the strategic situation and its fundamentally wrong assessment ...

The mistakes of the Polish command can be reduced to three main.

1. On the Polish side, it was believed that the main forces of Germany would be tied up in the west by the performance of France and England and would not be able to concentrate in the east.
2. On the Polish side, it was believed that with regard to active actions on the part of Germany, we can only talk about Danzig and not even about the entire Danzig corridor and Poznan, which were torn away from Germany under the Treaty of Versailles. Thus, they did not at all understand the real goals and intentions of the enemy, reducing the whole issue of a long overdue conflict to one Danzig.
3. On the Polish side, it was believed that Germany would not be able to immediately act with all the forces intended against Poland, since this would require their mobilization and concentration. Thus, there is still such an initial period that will enable the Poles to capture Danzig and even East Prussia during this time.

Thus, the mobilization readiness of Germany and its entry into the war at once by all the forces intended for this remain unaware of the Polish General Staff.

The Poles did not understand the strategic situation, and this was

already losing at least the first stage of the war, and even the entire WAR.

In this respect, the war for Poland was lost even earlier than started.

A deep misunderstanding of the entire strategic situation led the Polish command to a completely ephemeral plan for strategic deployment ...

The Polish strategic deployment in September 1939 was based on an offensive plan that aimed at capturing Danzig and East Prussia. Strategic arrogance, devoid of any real basis, was brought by this plan to the highest apogee of its caricature ...

The whole mass of deployed troops was very poorly managed, and the headquarters

operational groups were represented by barely cohesive organisms. Finally, all the troops remained in the open field. There were no fortifications of the area, strong points and defensive lines, with the exception of the fortified point of Kulm on the river. Vistula in the Danzig Corridor and Modlin Fortress at the confluence of the Vistula and West. Bug. Nor was there a single serious attempt to build field fortifications in the days remaining before the opening of hostilities. The Polish General Staff blithely stated that there was no need for this: the war would be carried out as a maneuver ...

There was no initial period of the war. No strategic forewords or preliminaries. The war began immediately in expanded form and in full swing. It was precisely this moment of the sudden opening of hostilities on a broad front and all the deployed forces on the Polish side that was miscalculated.

With the mistakes of the Polish General Staff already mentioned, this created an atmosphere of complete strategic confusion, which soon turned into general confusion. The Polish army was taken by surprise by the very form of the sudden invasion of the armed forces of Germany, and this dealt it an irreparable and most decisive blow.

The fourth mistake can be called Stalin's confidence that his Red Army soldiers and commanders, "mastered advanced military equipment, politically conscious, full of hatred for the enemy, physically strong, hardy and dexterous, who know military affairs very well, selflessly devoted to their socialist homeland and the party of Lenin - Stalin", are far superior to the "snobbish Poles", are in no way inferior to German soldiers and officers, and "in future clashes between socialism and capitalism they will work miracles that military history does not yet know."

By the end of June 22, 1941, in an atmosphere of "complete strategic confusion", the Soviet military leadership, throwing cover plans into the trash, gave birth to Directive No. 3, excellent in its arrogance, setting the fronts the following tasks: sea, deliver a powerful counterattack from the Kaunas region to the flank and rear of the enemy Suwalki grouping, destroy it in cooperation with the Western Front, by the end of June 24, capture the area

Suwalki;

armies of the Western Front, holding back the enemy in the Warsaw direction, deliver a powerful counterattack with the forces of at least two mechanized corps and front aviation against the flank and rear of the enemy Suwalki grouping, destroy it together with the North-Western Front and, by the end of June 24, capture the Suwalki area;

armies of the Southwestern Front, firmly holding the state border with Hungary, by concentric strikes in the general direction to Lublin by the forces of the 5th and 6th armies, at least 5 mechanized corps and all aviation of the front, encircle and destroy the enemy grouping advancing on the Vladimir-Volynsky front, Krystynopol, by the end of June 24, capture the Lublin region, firmly provide yourself from the Krakow direction.

Thus, the troops were ordered to defeat the enemy in three strategic directions at the same time without preparation with powerful blows in one day and further advance on his territory. Something

this is reminiscent of the Zhukovsky attack on Bain-Tsagan - without preparation, which Pavlov spoke about so beautifully, without reconnaissance, without knowledge of the enemy, without communications, without air support and interaction with the infantry. Mechanized corps were thoughtlessly thrown into battle - to surround and destroy - and dissolved like sugar in boiling water. The process is described in sufficient detail in modern research, but still a few examples.

From the report of Major General R.M. - Shestopalov, commander of the "understaffed" - only 730 tanks, 68 armored vehicles, 288 guns and mortars, 199 tractors, 2945 vehicles - of the 12th mechanized corps (North-Western Front):

"Before the start of the war, units were detached from combat training by separate orders and instructions, and on the very first day of the battle it became clear that they did not represent the kind of motorized mechanized units that we would like to have ...

From the very first days of the operation, operational orders and combat orders began to arrive 2-3 times daily, contradicting each other. As a result, the troops twitched in vain, and this situation did not make it possible to expediently use forces and means to fulfill the order, this did not make it possible to use a large formation with effect ...

After the first day of the march, and especially after the first battle, the vehicles began to quickly fall out of action by the dozens. These vehicles, due to the lack of spare parts both on routes and during hostilities, were not restored, and if they were restored, then some, and only on the battlefield, since the lack of tractors did not allow them to be towed to collection points for emergency vehicles. For the same reason, a lot of materiel was left on enemy territory ...

The absence of our fighter aviation in this direction gave the enemy complete air supremacy. Therefore, the enemy bombers did what they wanted with complete impunity. They smashed units on marches, at crossings, when located on the spot, destroying the material part and taking people out

out of order, thereby lowering the combat readiness of the units. When making one march, enemy aircraft managed to bomb the same unit 2-3 times in one day. On June 26, 1941, enemy aircraft destroyed and burned 17 combat and 20 transport vehicles ...

In the process of hostilities, an extremely low exactingness of the commanding staff was revealed, cases of cowardice were established.

Something incredible was happening on the retreat routes of the rifle units, and there were often no people who would put things in order when they retreated. There were no representatives of the highest headquarters, carrying out the service of control over the withdrawal of units ...

Troop control was weak due to the lack of radio communications. There were no permanent wires. The radio communication was almost non-existent. The only means of communication for the entire duration of the operation were the delegates of communication.

By July 4, 50 T-26 tanks remained in the 12th mechanized corps, the number of personnel had fallen from 28,832 fighters and commanders to less than 17,000.

3rd mechanized corps (672 tanks), inflicting a "powerful counterattack on

Suwalki," according to headquarters reports, on the fourth day of the war "died all":

"So far, up to 400 people of the remnants of the 2nd Panzer Division (Solyankin) that left the encirclement and one BT-7 tank have been withdrawn and have already been collected.

The 5th Panzer Division also perished in a number of encirclements. There is absolutely no personnel."

The remnants of the 5th Panzer Division, which had 268 tanks before meeting with the enemy, including 50 "thirty-fours" and 76 armored vehicles, were found in the Molodechno area in the Western Front: "There are three tanks, twelve armored vehicles, forty trucks."

From the report of Major General Vershinin, Assistant Commander of the North-Western Front, dated July 11:

"The general impression is that tanks are being used incorrectly: without infantry and interaction with artillery and aircraft. Worst of all, mechanized corps do not exist, since Colonel-General Kuznetsov pulled them apart completely, which contributed to huge losses in materiel, unprecedented in size.

From a letter from Colonel P.P. Poluboyarov, head of the ABTU of the North-Western Front:

"For the most part, counterattacks were delivered by our troops frontally, often scattered, without concentrating the main efforts on decisive directions, on undisrupted and STRONG enemy groupings. The enemy had good air reconnaissance. Hitler's pilots quickly revealed the regroupings and concentrations of our troops, especially they followed the movements of tank formations ...

There are no mechanized formations at the front, there are only bloodless tank units that cannot solve any serious tasks.

On the Western Front, where it suddenly became clear that "the deployment of mechanized corps did not correspond to the plans of the command," similar "miracles" were happening.

From the memoirs of S.A. Afanasyev (4th Panzer Division of the 6th Mechanized Corps - the most powerful division in the Red Army, which had 452 tanks, including 63 KV and 160 "thirty-fours"):

"On the morning of June 23, German aircraft fired at us. Our tanks were the latest, every single one of them 1-34 and KV. We hid in the woods. At that time, Captain Rassadnev was still in command in our battalion, but since noon on June 23 I have not seen him, because several times that day we scattered in all directions ... retreated through forests, swamps, along impassable roads, since all good roads were the Germans ... It seems to me that the officers themselves created the panic. In front of the soldiers, they tore off the officer's stripes. It was forbidden even to shoot at the planes. But there were so many troops, planes flew overhead ... So we almost reached Smolensk, and left so much equipment there! Everyone fled, and the equipment and weapons (tanks, guns) were abandoned. I can't tell you where the fighting took place, as there were almost none."

From the report of Major General S.V. Borzilov, commander of the 7th Panzer Division of the 6th Mechanized Corps:

"On June 22, 1941, the division was staffed in personnel: 98 percent of the privates. junior command staff by 60 percent.

and command staff by 80 percent. Material part: heavy tanks - 51, medium tanks - 150, BT-5 - 7 - 125, T-26 - 42 units ...

At 10 pm on June 22, the division received an order to move to a new concentration area - st. Valpa (east of Bialystok) and the subsequent task: to destroy the tank division that broke through to the Bialystok area. The division, following the order, encountered traffic jams created on all roads due to the disorderly retreat of the rear of the army from Bialystok (the road service was not established). The division, being on the march and in the concentration area from 14:00 to 09:00 and from 11:00 to 14:00 on June 23, was under enemy air strikes all the time. During the period of the march and stay in the area of concentration up to 14 hours, the division had losses: tanks were knocked out - 63, all the rear of the regiments were defeated, the rear of the 13th regiment was especially damaged.

The enemy tank division was not in the Belsk area, due to which the division was not used ...

On June 24-25, the division, following the order of the corps commander and marshal Comrade Kulik, struck 14 tp Old Dubno and further Grodno, 13 tp Kuznitsa and further Grodno from the west, where up to two infantry battalions and up to two artillery batteries were destroyed. After completing the task, parts of the division concentrated in the area of Kuznitsa and Old Dubno, while parts of the division lost 18 tanks, burned out and stuck in the swamps. On June 25-26, until 9 p.m., the division led

defensive battle in cooperation with the 29th infantry division and 36th infantry division, struck in front of the front 128 infantry division 29 infantry division and 56 Units.

In parts of the division, fuel and lubricants were running out, it was not possible to refuel due to the lack of containers and head warehouses, however, they managed to get one gas station from the burned-out warehouses of the Kuznitsa and the Krinki metro station (in general, fuels and lubricants were mined as someone managed). By the end of the day on June 25, an order was received from the corps commander to withdraw beyond the river. Svisloch, but they performed it only on a special signal. According to preliminary data, on the night of June 26, 4th TD of the 6th mechanized corps moved beyond the river. Svisloch, as a result of which the flank of the 36th Cavalry Division was opened. By the end of June 26, the enemy, using the reserve, went on the offensive. At 21 o'clock, units of the 36th cd and 128th motorized rifle divisions of the 29th motorized rifle division began to retreat indiscriminately. I took measures to restore the situation, but this was not successful. I gave the order to cover the retreating units of the 29th Motor Rifle Division and the 36th Infantry Division in the area of Cape Krinki, made a second attempt to delay the retreating units, where I managed to detain the 1286th Motor Rifle Division, and on the night of June 27 I crossed the river. Svisloch east of Cape Krinki (this was the beginning of a general disorderly retreat), at that time communication with the corps headquarters was broken. Communication was restored by the end of June 27 at the crossings near Volkovysk. Parts of the division all the time from the Forge, Sokulka and to Slonim fought with the pursuing enemy airborne units. On June 29, at 11 o'clock, with the remnants of materiel (3 vehicles) and a detachment of infantry and cavalry, he approached the forests east of Slonim, where he fought on June 29 and 30. June 30 at 22 o'clock moved with a detachment into the forests and further to the Pinsk swamps along the route Bulka, Velichkovichi, Postoly, st. Old woman, Gomel, Vyazma.

The entire material part was left on the territory occupied by the enemy, from Bialystok to Slonim ...

The 6th mechanized corps during the war with the Germans from 22 to 30.6.41 was not used as a whole as a mechanized formation, it was transferred from one direction to another, being under

enemy air strikes.

The 6th mechanized corps in general and the 7th tank division in particular were defeated by German infantry and dive bombers. General Borzilov writes like this: "During the period of hostilities against the tank units of the German army from 22 to 30.6.41, I did not see a major use of tanks. The Germans use tanks mainly in small units: a platoon, a company, a battalion in cooperation with other branches of the armed forces (motorized infantry and cavalry).

From the report of Colonel Ivanin, head of the ABTU of the Western Front:

"Interaction of tank formations with infantry, artillery and aviation

a) The issue of interaction between these branches of the armed forces is relevant. Without thinking through this issue, it is unthinkable to hope to win battles or at least partially achieve success, nevertheless, the commanders of units and formations paid insufficient attention to this issue from the first days of the war.

6) Artillery preparation before the tank attack was not carried out, and where it took place, then no more than 10-15 minutes, which did not provide



suppression of enemy firing points, mainly anti-tank guns. The artillery provided insufficient support and accompanied the tanks with their fire. The tanks, going on the attack, met with heavy fire from anti-tank guns and suffered significant losses due to the lack of a proper agreement on interaction.

c) Infantry, as a rule, lags behind tanks and does not consolidate on the lines reached by tanks.

d) The question of the interaction of tanks with aviation was also not well thought out: from the first days, the soldiers of our tanks did not have identification marks, the infantry did not designate the front line in any way, and it was difficult for aviation to distinguish friendly from the enemy ...

Mechanized corps, FULLY equipped with materiel, can solve tasks on an army and even front-line scale, however, the actions of the 6th mechanized corps at the beginning of the war and the 5th and 7th mechanized corps subsequently did not produce significant results.

The reasons for their failure were as follows:

1. The lack of aerial reconnaissance and guidance aircraft led to blind actions.
2. The lack of escort by combat aircraft, with the weakness of their own artillery, led to unprepared attacks on completely unsuppressed defenses.
3. The lack of cover by fighter aircraft allowed enemy dive bombers to bomb with impunity and pour phosphorus mixture on tanks.
4. Incorrect use of mechanized corps in hard-to-reach terrain without any connection with infantry, artillery and aviation and an offensive operation during a general defensive operation.

From the report of Major General B.T. Volsky, Assistant Commander of the Southwestern Front for Tank Forces:

1. From the very first day of the war, mechanized corps were misused, because they were all attached to the armies ...
2. All combat operations of the mechanized corps took place without thorough reconnaissance, some units were completely unaware of what was happening in the immediate vicinity. Air reconnaissance in the interests of the mechanized corps was not carried out at all.

The control of the mechanized corps by the combined arms commanders was poorly organized, the formations were scattered (8th mechanized corps) and by the time of the offensive they were cut off from each other.

Army headquarters were completely unprepared to manage such large mechanized organisms as mechanized corps. The infantry, as a rule, acted independently, and the situation did not allow organizing

interaction.

3. The headquarters of the armies completely forgot that the material part has certain engine hours, that it requires inspection, minor repairs, additional replenishment of fuel and ammunition, and the technical staff and the heads of the armored departments of the armies did not tell them this, and instead of withdrawing after completing the task the mechanized corps, having given it the time necessary for this purpose, the combined arms commanders demanded only "come on" and nothing more. There was absolutely no interaction with the air forces. The mechanized corps had absolutely no cover both on the march and on the battlefield, the issue of simultaneous processing of the front edge by artillery and aviation was especially bad.

4. Information from top to bottom, as well as with neighbors was put out of hand badly.

The war from the first day assumed a maneuverable character, the enemy turned out to be more mobile. The main thing in his actions is that he widely used and continues to use detours and flank attacks ...

Our actions were in the nature of defense on a broad front, and, unfortunately, the mechanized corps were also forced in some cases in the initial period of hostilities, and subsequently, as a system, to conduct defensive battles.

Our commanding staff is not well trained in peacetime precisely for similar actions, therefore, it strives for defense with an elbow connection with a neighbor, and there were not enough forces to have such a defense.

The biggest drawback was that the orders very often overlapped, sometimes they did not set specific tasks, and frequent changes in the situation sometimes led to the fact that the army headquarters completely lost control of the mechanized corps.

This is all that concerns combined arms commanders.

But there were many shortcomings made directly by the commanders of mechanized units and formations. To those relate:

1. The headquarters of the mechanized corps, tank divisions and regiments did not yet have the proper operational-tactical outlook, they could not draw the right conclusions and did not fully understand the plan of the army and front command.

2. Command staff has insufficient initiative.

3. All the movable means possessed by the mechanized units were not used.

4. There was no maneuverability - there was lethargy, slowness in

completing tasks.

5. The actions, as a rule, were in the nature of frontal strikes, which led to an unnecessary loss of materiel and personnel, and this was because the commanders of all degrees neglected reconnaissance.

6. The inability to organize the battle formations of the corps in directions, to block the enemy's movement paths, and the latter mainly moved along the roads.

7. No barriers were used, there was absolutely no interaction with the engineering troops.

8. There was no desire to deprive the enemy of the possibility of transporting fuel and ammunition. Ambushes on the main lines of enemy action were not practiced.

9. Enemy actions along the flanks led to the fear of being surrounded, when the tank units have nothing to fear from being surrounded.

10. Large settlements were not used to destroy the enemy and [revealed] the inability to operate in them.

11. Management, from the platoon commander to the big commanders, was bad, the radio was used badly, covert command and control of troops was badly set, a lot of time wasted on coding and decoding.

12. The training of crews in matters of preserving the material part is exceptionally bad: there were cases when crews left vehicles with ammunition; there were isolated cases when the crews left the cars and left themselves.

13. In all units and formations there were no evacuation

the available means could provide mechanized corps and tank divisions only in offensive operations.

14. The personnel of the new equipment has not mastered, especially the "KV" and "T-34", and is completely untrained in the production of repairs in the field. The repair facilities of the tank divisions were unable to provide repairs in such a type of battle as a withdrawal.

15. A large percentage of the commanding officers did not know the tasks, they did not have maps, which led to the fact that not only individual tanks, but entire units wandered.

16. There were no technical means of closing in mechanized corps even in peacetime, and this issue was given in preparation

very little attention.

17. The existing rear organization is extremely cumbersome: instead of working with the combat materiel, the assistant commander for the technical part, as a rule, was left in the second echelon with the rear. The rear needs to be reduced, leaving only the means of transporting fuel, ammunition and food in the mechanized staff.

18. Army assembly points for emergency vehicles, as a rule, were not organized, no one supervised their work. The absence of evacuation means in the regular organization led to the fact that the evacuation of combat materiel, as a rule, in the army and front-line rear

was absent.

19. The chiefs of the armored departments of the army performed only the functions of supply, and they did not completely cope with it. The apparatus of the chiefs of armored departments of the armies is small and does not provide command and control. Their selection was very

unsuccessful...

20. The headquarters turned out to be poorly trained, staffed, as a rule, by combined arms commanders who did not have experience in tank units.

21. Many people commanded mechanized corps: the front set tasks, the army set tasks, the commanders of rifle corps set tasks.

22. Some of the commanders of the mechanized corps were not up to the mark and had absolutely no idea how to manage the mechanized corps.

23. In higher educational institutions (academies), such types of combat that I had to meet have never been worked out, and this was a big drawback in the operational-tactical horizons of the majority of command and command personnel.

Everywhere the picture is depressingly monotonous - "ours are being beaten."  
They hit not with numbers, but with skill. What kind of Lublin is here, it will take three long years to walk to it.

By mid-July 1941, the mechanized corps had lost almost all of their tanks and most of their personnel. In accordance with the directive letter of the Headquarters of the High Command of July 15, "in view of the complete exhaustion of the material part", the abolition of the mechanized corps began. Tank divisions were transferred to the command of the army commanders, and motorized divisions were reorganized into rifle divisions. From the mechanized corps of the inner districts, 10 tank divisions were created. But the management of divisions in practice turned out to be too complicated, and from August 12, the transfer of tank troops to a brigade organization began, and, for well-known reasons, the staffs of these brigades were continuously reduced.

On December 1, 1941, when the Germans examined the towers of the Moscow Kremlin through binoculars, 1,730 serviceable tanks.

The main reason for the catastrophe of 1941 was not the surprise of the German attack, but the Wehrmacht's advantage in combat training, the advantage of the German command staff in strategic, operational and tactical thinking, the advantage in the level of organization and interaction of military branches.

The gigantic thoughtless mechanism created by Stalin, unable and unwilling to fight for the "conquests of October" and the territories taken from the neighbors, ceased to exist.

The Banner of Victory was brought to Berlin by another army, created during the war and "learning war in war."

The Soviet Union set a record not only in terms of the number of tanks produced. There were also "many thousands of batteries" and squadrons, dozens of rifle divisions, millions of armed soldiers - "new people of the Stalin era" who sang the "Fighting Stalinist":

We will teach everyone a memorable lesson,

Who will break into our Soviet house,

And we'll knock out two eyes for an eye,

And for a tooth - we will break the whole jaw.

By the end of 1941, only 8% of the entire mighty, "invincible and legendary" cadre Red Army had survived. But more on that in the next book.

## Literature

Bagramyan I.Kh. Thus the war began. Moscow: Military Publishing House, 1977.

Baryatinsky M. Soviet tanks in battle. From T-26 to IS-2. Moscow: Yauza-EKSMO, 2007.

Combat and strength of the Armed Forces of the USSR during the Great Patriotic War (1941-1945). Statistical collection No. 1 (June 22, 1941) M., 1994.

Voznyuk V.S., Shapov P.N. Armored vehicles. M.: DOSAAF, 1987.

Issues of strategy and operational art in Soviet military writings. (1917-1940). Moscow: Military Publishing House, 1965.

Issues of tactics in Soviet military writings (1917-1940). M.: Military Publishing, 1970.

Zakharov M.V. General Staff in the prewar years. M.: AST, 2005.

Zefirov M.V., Degtev D.M. All for the front? How the victory was actually forged. M.: AST, 2009.

Gorbunov E. August 20, 1939. M.: Young Guard, 1986.

Guderian G. Memoirs of a soldier. Smolensk: Rusich, 1999.

De Gaulle S. Military memoirs. Call. 1940-1942 years. Moscow: Foreign Literature, 1957.

Dragunsky D.A. Years in armor. M.: Military Publishing House, 1983.

Zhukov G.K. Memories and reflections. M., 1968.

Ivanovsky E.F. The tankers started the attack. M.: Military Publishing, 1984.

Isserson G.S. New forms of struggle. Moscow: Voengiz, 1940.

Katukov M.E. On the edge of the main blow. Moscow: Higher school, 1985.

Kolomiets M. Battles near the Khalkhin-Gol River. May - September 1939. M.: KM Strategy, 2002.

Kolomiets M. Tanks in the Winter War 1939-1940. M.: KM Strategy, 2001.

Kostenko Yu.P. Tanks (memories and reflections). M., 1996.

Kostyuchenko (S.A. How the tank power of the Soviet Union was created. M.: AST, 2004.

Malygin K.A. In the center of the battle formation. Moscow: Military Publishing House, 1986.

Mellenthin F. Tank battles 1939-1945. Combat use of tanks in World War II. Moscow: Publishing house of foreign literature, 1957.

Middeldorf 5. Tactics in the Russian campaign. Moscow: Military Publishing House, 1958.

Müller-Hillebrand B. Land Army of Germany 1933-1945 M.: Izographus, 2002.

On the border, the clouds go gloomily ... (To the 65th anniversary of the events near Lake Khasan ..). Moscow: Kuchkovo field, 2005.

The day before. Western Special Military District (late 1939 - 1941). Documents and materials. Minsk: NARB, 2007.

Weapon of victory / Edited by V.N. Novikov. M.: Mashinostroenie, 1987.

Pavlov M.V., Zheltov I.G., Pavlov I.V. BT tanks. M. LLC "Publishing Center" Exprint ", 2001.

Rapteg PT. History of creation and application. Moscow: Eastern Front, 1995.

Rapteg GU. History of creation and application. Moscow: Eastern Front,

1995.

Popel N. In a difficult time. M.: AST, 2001.

Radzievsky A.I. Tank strike (Tank army in the offensive operation of the front according to the experience of the Great Patriotic War). M.: Military Publishing, 1977.

Development of tactics of the Soviet Army during the Great Patriotic War (1945-1945). Moscow: Military Publishing House, 1958.

Raus E. Tank battles on the Eastern Front. M.: AST, 2005.

Russia and the USSR in the wars of the twentieth century. Losses of the Armed Forces: Statistical study / Under the general editorship of G.F. Krivosheev. M.: OLMA-PRESS, 2001.

Rotmistrov P.A. Steel Guard. M.: Military Publishing, 1984.

Russian archive: Great Patriotic. T. 12 (1-2). Materials of the meeting of the top leadership of the Red Army on December 23-31, 1940. M.: TERRA, 1993.

Safonov V. Earth in bloom. Leningrad: Newspaper, magazine and book publishing house, 1949.

Collection of military documents of the Great Patriotic War. Issue 33. M.: Military Publishing House, 1957.

Svirin M. The armor is strong. History of the Soviet tank 1919-1937. Moscow: Yauza-EKSMO, 2005.

Svirin M. Stalin's armor shield. History of the Soviet tank 1937-1943. M.: Yauza-EKSMO, 2006.

Svirin M. Stalin's steel fist. History of the Soviet tank 1943-1955. M.: Yauza-EKSMO, 2006.

Simonov N.S. The military-industrial complex of the USSR in 1920-1950. M., 1996.

Smirnov A. Great maneuvers // Rodina, 2000, No. 4.

Smirnov A. Not ready for battle. The army of Marshal Blucher on the eve of 1937 // Rodina, No. 9.

Soviet military encyclopedia: in 2 vols. M.: OGIZ RSFSR, 1932-1933.

Steel muscles. M.: TERRA, 1998.

T-34. History of creation and application. Moscow: Eastern Front, 1996.

Chuikov V.I. Mission in China. M.: Military Publishing House, 1983.

Shishov A.V. Russia and Japan. History of military conflicts. Moscow: Veche, 2001.

Shmelev I.P. Armored vehicles of Germany 1934-1945 M.: AST-Astrel, 2003.

Shmelev I.P. BT tanks. Moscow: Hobbikniga, 1993.

"Flying coffins" of Stalin. "It's getting lower and lower and below..."

## Chapter 1

Contrary to popular belief, until 1917 there was an aviation industry in Russia. Not as powerful as in the West, but dynamically developing and steadily increasing its potential. By the way, the first statesman who dared to become a passenger of an airplane was the Chairman of the Council of Ministers P.A.

Stolypin.

If before the First World War, the productivity of domestic aircraft factories was about 480 aircraft per year, then in 1916 1384 heavier-than-air aircraft were produced (in the Soviet Union this quantitative indicator would be reached only after 15 years) and 1398 aircraft engines were assembled. The government heavily financed the aircraft industry, allocating large funds to contractors. In the industry, "worked", mainly, private or equity capital, not constrained by bureaucratic restrictions.

In October 1917, there were 34 aviation enterprises in Russia, employing up to 12,000 workers. Of these, 14 factories produced aircraft, seven - engines, three - propellers and skis, two - magnetos, one - aircraft instruments, the rest were being completed. Along with the firms that arose earlier - the "First Russian Aeronautics Partnership" S.S. Shchetinina (plant "Gamayun"), plants V.A. Lebedev in St. Petersburg, Taganrog and Penza, who assembled seaplanes and the famous Ilya Muromets multi-engine aircraft, the aviation department of the St. Petersburg Russian-Baltic Carriage Works, the Moscow Dux plant, A.A. Anatra in Odessa and Simferopol, V.F. Adamenko in the Crimea - the production of aircraft was mastered by the enterprise of the Italian designer F.E. Mosca in Moscow, F.F. Tereshchenko near Kiev, F. Meltzer's factory in Petrograd. In the Kherson region, the largest experimental and research aviation center, Aviagorodok, was created.

Long before Stalin's industrialization and the "five-year plan in four coffins" in Russia, a system for training aviation personnel was developed and the organizational structure of Russian military aviation was created. Ya.M. biplanes appeared. Gakkel and A.S. Kudasheva, flying boats D.P. Grigorovich, fighters and heavy bombers I.I. Sikorsky, helicopters B.N. Yuriev, scouts V.N. Hioni. A.A. built their planes. Porohovshchikov, F.N. Bylinkin, L.D. Kolpakov-Miroshnichenko, A.A. Krylov, V.L. Moiseev, V.P. Nevdachin, V.F. Saveliev, A.A. Semenov. Aviation bombs and torpedoes, bomb releasers, machine-gun and cannon mounts, synchronizers, aircraft radio stations, cameras, navigational instruments, a backpack parachute were created, wind tunnels and laboratories were built, a fairly advanced technology for the manufacture of aircraft was worked out: acetylene welding was widely used, aggregate assembly and plasma-template method.

The largest increase in capacity was observed in engine building, mainly due to capital investments by French firms. In Moscow, in addition to the Gnome and Ron plant, the Salmson plant arose, and the construction of workshops for the Renault company began in Rybinsk. In 1916, the Duflon and Konstantinovich (Deka) plant was organized in Aleksandrovsk. The production of aircraft engines of their own design was also carried out by RBVZ, the Joint-Stock Partnership Motor, and the PP carriage and automobile factory. Ilyin.

In 1917, it was planned to produce 2250 aircraft at all factories, and a year later - to bring the productivity of the aircraft industry to 3000-4500 aircraft.

After February, foreign entrepreneurs began to gradually curtail production and export capital abroad. The October Revolution and the Civil War led to the complete collapse of the Russian



aircraft industry. In this area, the new government considered the cleansing of the Office of the Air Force from "counter-revolutionary elements" as the highest priority. Which task was successfully solved by specially appointed commissars, who considered aviation a purely bourgeois entertainment, like perfume and lipstick. At the same time, the sign was changed: from April 1918, the swastika in a white circle became the official emblem of the Red Air Fleet, though not for long.

On June 12, 1918, the aeronautical apparatus factories were assigned to the last category of supply of fuel, raw materials and electricity. Military orders have ceased. Thousands of workers and engineers, left without work, wages and "class food rations", went to free bread. The largest enterprises for some time still continued to function at the expense of accumulated stocks, producing 255 aircraft and 79 engines. Then nationalization followed, the refusal of the new government to pay foreign debts, foreign investment disappeared, and the former empire turned into wild territory - the Soviet of Deputies, with which no one wanted to deal.

In 1919, 137 aircraft and 77 engines were assembled in Soviet Russia, in 1920 - 166 and 81, respectively. , Sarapul and Karasubazar. Meltzer's Petrograd factory was redesigned to produce furniture, and an aerotechnical plant burned down in Moscow along with a unique wind tunnel. Of the fourteen aircraft manufacturing plants, only three were left, which were in the most deplorable state: with runaway workers, equipment out of order, stolen tools, without heating and stocks of raw materials. The quality aviation wood accumulated over the years was used for firewood.

During this time, hundreds of qualified specialists left the country, unable to overcome their disgust for the ideals and principles of Marxism. Among them were the chief designer of the aviation department of the RBVZ I.I. Sikorsky, who became "helicopter pilot No. 1" in a foreign land, outstanding aerodynamics A.T. Van der Flit (author of the first domestic textbook) and M.E. Glukharev, strongman S.P. Timoshenko, academicians A.A. Lebedev (the theory of aircraft engines) and D.P. Ryabushinsky (founder and scientific director of the Kuchinsky Aerodynamic Institute), Professor G.A. Botezat, who developed the mathematical theory of aircraft stability (he was greeted with open arms at the US National Committee on Aeronautics), talented engineers V.S. Margulis, F.I. Bylinkin, V.V. Jordanov, M.L. Grigorashvili, M.M. Strukov, I.I. Makhonin, R.S. Komarnitsky, Yu.K. Otfinovsky, V.I. Yakimuk, legendary pilots B.V. Sergievsky, A.N. Prokofiev-Seversky, B.V. Korvin-Krukovsky and many others. Russian designers successfully worked in the aviation industry of the USA, France, Germany, Belgium, Great Britain, founded aircraft construction in Japan, China, Yugoslavia, and Poland. The "Russian" aviation companies "Sikorsky Corporation", "Seversky Aircraft", "Chase Aviation Company", "IDO", "Helicopter Corporation of America" gained worldwide fame. Order

Legion of Honor - for outstanding contribution to the development of French aviation  
- was awarded to V.A. Lebedev.

Scientists and designers who decided to stay "in the homeland of the victorious proletariat" catalyzed around Professor N.E. Zhukovsky, on whose initiative the Central Aerohydrodynamic Institute (TsAGI) was established in December 1918 by government decree. The Institute united the employees and the base of three aviation organizations: the Calculation and Research Bureau at the Aerodynamic Laboratory of the Imperial Moscow Technical School, the Kuchin Aviation Institute and the "Flying Laboratory" at the Central Aerodrome. The institute was headed by the Collegium chaired by N.E. Zhukovsky and MTU graduate A.N. Tupolev. V.P. Vetchinkin, A.A. Arkhangelsky, B.S. Stechkin, N.I. Ivanov, N.V. Krasovsky. The specialists of the new center were engaged in the development of the scientific foundations of modern aviation on the basis of theoretical and experimental studies of aerodynamics, hydrodynamics and flight dynamics of aircraft, their strength.

In 1918-1920, the Red Army was armed with about 300 aircraft of various designs. The replenishment of the fleet was carried out mainly by repairing damaged and captured aircraft. At the end of the Civil War, there were 65 squadrons with an average of five dilapidated aircraft each.

"It's no secret," wrote the journal "Bulletin of the Air Fleet," that our native Red Air Fleet is on the verge of death: there are almost no new aircraft, old ones can no longer be repaired, a few trophy ones captured from counter-revolutionaries will also soon fail. .

On January 26, 1921, a special commission was created in Moscow, which developed a three-year program for the development of "aeronautics and aircraft construction." The essence of the program was simple: in parallel with domestic production, acquire (buy or steal) in the West for the needs of the Air Force the necessary models of equipment and licenses for its construction.

In 1921-1922, 150 German military aircraft of the First World War period were purchased abroad - Halberstadt, Fokker r-UP and others. Another 70 aircraft - "Avro", "Martinside", "De Havilland" - were purchased in England. At the end of 1923, an agreement was signed with a subsidiary of the Fokker company in Amsterdam for the supply of 200 reconnaissance and fighter aircraft of the C-[U and P-XG! In the same period, 30 Balilla A-1 fighters, 50 SVA-10 scouts, about 20 A-300 scouts, and fifty Savoy S-16 flying boats were purchased from the Italian company Ansaldo. And another hundred British Martinside E-4 fighters.

As this will be repeated many times later, as soon as the Bolsheviks became concerned about the security of the country, a mortal famine began in it. Which is quite natural, given that in 1921 the value of the gross output lying in the ruins of Soviet Russia amounted to only 1344 million rubles, 11.5 million rubles were spent on the purchase of aircraft, aircraft engines and spare parts for them in 1922, the total amount of the transaction with Fokker - 3.6 million. In addition, a quarter of the national income of the former great railway power was invested in the construction of steam locomotive plants in Sweden; 5.5 million gold rubles

received in 1922 by the Comintern for the maintenance of the "fraternal" Communist Parties (the gold ruble then "cost" 6.38 French francs); the askers of the Turkish general Mustafa Kemal were generously supplied with gold and weapons, and you never know what expenses. For example, they bought 60,000 sets of leather uniforms for valiant Chekists and paid for a monument to Karl Marx in central London. And what about the 300 million marks allocated in 1923 for the implementation of the "German October"? And how many suitcases with currency and diamonds went into organizing the "proletarian uprising" in Bulgaria?

Most of the airplanes purchased abroad were morally obsolete, and sometimes simply defective machines, including due to the roguery and illiteracy of the Soviet agents who received them. So, in the report of A.P. Onufriev, director of the State Aviation Plant No. 1, in the name of I.V. Stalin, K.E. Voroshilov and V.V. Kuibyshev, it was noted that the sample of the Fokker RP-KhG aircraft was declared unsuitable for adoption during the preliminary test.

In 1923-1924, the flagship of the domestic aircraft industry GAZ-1 (former Dux) produced 23 Nieuport-24bis, 18 Sopwiches and 19 Dehavilands.

The Petrograd GAZ-3 "Red Pilot" (former RBVZ, together with the Gamayun plant), which was engaged in the repair of cars and engines, in 1923 launched the U-1 training biplane, copied from the English Avro-504K.

In the same year, GAZ-1, followed by the Taganrog aircraft plant GAZ-10 (the former enterprise of the Lebed joint-stock company), began to deploy the production of a two-seat "domestic" reconnaissance aircraft and light bomber P-1. The design of this biplane was designed by a student of I.I. Sikorsky, who graduated from the St. Petersburg Polytechnic Institute of Emperor Peter the Great, mechanical engineer N.N. Polikarpov, who creatively copied, based on the available possibilities (for example, due to the lack of small nails, the canvas was sewn to the ribs with twine) and materials (instead of wood, where possible, they used plywood and steel pipes, and instead of American spruce - Soviet Siberian pine), an English glider "De Haviland" PNE9 with an American 400-horsepower Liberty liquid-cooled engine. The technology was developed by engineer V.S. Denisov. By the way, "the drawings of SHE were found, which came to Russia back in 1917 and were already brought into line with the domestic system of measures, materials and technology at that time," and more than a hundred ready-made PON9E were purchased for the Red Air Fleet. Of course, our historians have always argued that the R-1, built in mass series until 1931 with a total of 3032 copies, "although outwardly it resembled its British predecessor, it was, in essence, a new aircraft and in terms of a number of characteristics, in particular, carrying capacity, surpassed both DXA4 and DX9.

In addition to this "particular", the Soviet clone, with similar weapons (two English machine guns - the course "Vickers" and the turret "Lewis") and a smaller flight range, weighed 670 kilograms more than the OH4 of the 1916 model with a 375-horsepower engine

(and 240 kg more than OH9), flew 40 km / h slower and one and a half kilometers lower. Moreover, the first production samples were surrendered without weapons or with one synchronous machine gun.

Himself N.N. Polikarpov, running for full membership in the Academy of Sciences, compiled in 1943 a list of 24 points of successfully solved scientific and practical problems. Half of the list is marked: "For the first time in the USSR" or "First in the world." There are even "streamlined winter skis for heavy aircraft", but Nikolai Nikolayevich did not even remember about the R-1. Great pilot M.M. Gromov, without delving into the intricacies of technology, wrote: "This aircraft was an exact copy of the English De Havilland OH-9 aircraft with a 400 hp engine>".

At the same time, the design teams of N.N. Polikarpov and D. Grigorovich tried, on the instructions of the military, to create a modern, high-speed and maneuverable fighter. The team of D.P. Grigorovich (unlike the group of N.N. Polikarpov, who developed a monoplane fighter scheme, on which pilot K.K. Artseulov almost died) decided to build a traditional biplane, which in 1926 became the first Soviet serial I-2-bis fighter, which developed maximum speed of 220 km/h and was armed with two machine guns. For three years, more than 200 rather mediocre aircraft were built at the GAZ-1 and GAZ-3 factories. Assistant to the head of the Air Force Research Institute for the technical part E.K. Stockmann in 1927 gave the car the following assessment:

"According to the conclusion of the Research Institute, the I2-bis aircraft is completely unsuitable as a modern fighter due to its low rate of climb, low ceiling and very poor maneuverability."

Engines for all this "flying zoo" had to be bought. For the engine building for a long time was the most backward branch of Soviet industry. In 1921-1924, the import of aircraft engines amounted to 1032 engines of various companies - the English Daimler and Sydney-Puma, the American Liberty and Spa, the French Ron and Hispano-Suiza, the German Maybach, Mercedes and BMW, Italian Fiat. Traveling salesmen all over Europe were happy to sell their "comrades" at breathtaking prices the goods stale after the world massacre, sometimes completely inoperative or with fake factory brands.

In order to eliminate the acute dependence on the West, starting from 1924, some foreign engines began to be produced in the USSR, "naturally", without any licenses. At the GAZ plant No. 4 "Motor" they mastered the M-5 (aka "Liberty-12"), the GAZ plant No. 2 "Icarus" (formerly "Thunder and Ron") produced 80-horsepower M-1 ("Ron"), plant GAZ No. 9 "Bolshevik" - M-6 ("Hispano-Suiza 8ÿÿ").

It was the 400-horsepower M-5, mastered under the guidance of the famous heat engineer Professor N.R. Brilling and engineer A.D. Shvetsov, installed on the R-1 and I-2 machines. In this regard, it is amusing to read in the "Military Historical Journal" the statement of the first deputy head of the department of the Main Staff of the Air Force that the "reconnaissance aircraft R-1 had a domestically designed engine."

On December 6, 1924, by a special decree of the Presidium of the Revolutionary Military Council of the USSR, the Air Force was allowed to purchase another 710 aircraft engines, including 150 Sydney-Puma, 50 Napier, 270 Lorrain-Dietrich, 15

Fiat, 150 Liberty, 75 BMW-[U]. Had to order more soon.

for 17740 engines. Military attaché in Paris L.G. Mironov managed in 1925 to get about 4,000  
Ron rotary motors lying around in a private warehouse; purchased practically at the  
price of scrap metal, they, under the "name" M-2, ensured the flights of Soviet training  
aviation for several years ahead.

The fact is that from a financial point of view, it was more profitable to buy aircraft abroad.  
At domestic factories, although they reproduced foreign designs, they did it  
according to their own artisanal technologies. For example, due to the lack of powerful  
presses, forty-five-kilogram crankshafts for the M-5 engine were machined  
from blanks weighing almost a ton. As a result, the "engine of domestic design"  
cost the country three times more than the exact same American "Liberty", and was 20%  
heavier, and the R-1 aircraft cost one and a half times more than the "very similar" POH9  
delivered from England. . Not to mention the difference in product quality.

Great help to Soviet Russia was provided by friends from defeated Germany. Under  
the terms of the Treaty of Versailles, the Germans were categorically forbidden to own and  
build airplanes, so they had to scrap 14 thousand cars. After the signing of the  
corresponding agreement in Rapallo between the two European  
outcasts, secret cooperation in the military sphere began. In November 1922, a  
concession agreement was signed with the Junkers company, which was the first in the world  
to establish the serial production of duralumin monoplanes, on the construction and  
equipment of a large aviation enterprise in Fili near Moscow for the production of all-  
metal aircraft, aircraft engines and rolled duralumin. The military circles of  
Germany hoped as a result to get a testing ground for the development of  
German aircraft. The Soviet government also had high hopes for cooperation with  
Junkers. It was planned that this firm would lay the foundation for the entire aircraft  
industry. Under the terms of the contract, the plant in Fili was leased for thirty years, and its  
productivity was to reach at least 300 aircraft and 450 aircraft engines per year.

However, the hopes did not come true. During the four years of the  
concession's existence, only 20 Yu-20 seaplanes and a little more than a hundred Yu-21  
reconnaissance aircraft were made. In addition, the Junkers plant in Sweden delivered 15  
YUG-1 three-engine metal bomb carriers. All cars had characteristics below those  
promised. At the beginning of 1925, due to disagreements between the concessionaires, mainly  
financial, production was practically stopped, most of the German specialists left for  
the Fatherland. The company did not even begin preparations for the production of aircraft  
engines. The vigilant Chekists came to the conclusion that the Junkers firm is in fact a spy  
organization whose goal is the collapse of the Soviet aircraft industry. It is only unclear  
what exactly the Germans were going to ruin. It is even more interesting that,  
having recently brought the Bolsheviks to power, now, through the Junkers firm,  
senselessly, from the point of view of the political alignment of forces in Europe, they wanted  
to achieve not only "weakening the military power of our country", but also  
passionately dreamed of "restoring monarchical order."

In March 1926, the Politburo of the Central Committee of the All-Union Communist  
Party of Bolsheviks ordered the termination of the contract with the Junkers company. Soviet aviation decided

develop on their own strengths. All the more so since there have been encouraging developments.

In 1922, at the Gospromsvetmet plant in the village of Kolchugino, Vladimir Region, under the guidance of metallurgist Professor I.I. Sidorin, engineers V.A. Butalov and Yu.G. Muzalevsky received the first batch of aluminum alloy ingots, called chain aluminum. It was recognized that the alloy is not inferior in its properties to foreign analogues and can be used in aircraft construction. In the autumn of the same year, a Commission for the construction of all-metal aircraft was formed at TsAGI, chaired by A.N. Tupolev as part of I.I. Sidorina, G.A. Ozerova, I.I. Pogossky. From the work of this commission, in which A.I. Putilov, V.M. Petlyakov, B.M. Kondorsky, N.S. Nekrasov, in fact, the history of the Tupolev Design Bureau begins. Before taking on aircraft, the technology was tested on snowmobiles and gliders. The sleigh was followed by the ANT-1, an aircraft built from traditional materials, but with the use of Kolchugino aluminum. In May 1924, the first Soviet all-metal aircraft ANT-2 took off. After the technology of using aluminum chain mail in aviation was sufficiently developed, the commission for the construction of all-metal aircraft was abolished and in September 1925 the design bureau AGOS (aviation, hydroaviation and pilot construction) was formed at TsAGI, which became a monopolist in the field of metal aircraft construction - in the sense that other organizations were expressly forbidden to design combat aircraft from

metal.

In general, the attitude of the Soviet government towards unauthorized creativity, creativity without an order or "coordination", is clearly seen from the anecdote told by the People's Commissar of Ammunition B.L. Vannikov:

"Once Stalin told me on the phone that he had received from N.A. Bulganin, a report about one front-line soldier who very easily converted a seven-shot rifle into an automatic one.

"I instructed," Stalin said, "to reward the author for a good offer, and to punish him for unauthorized alteration of weapons with several days of arrest ..."

In November 1925, the ANT-4 twin-engine monoplane with corrugated metal skin took off, which was to become the TB-1 heavy bomber. At the same time, the Tupolev group completed the creation of a two-seat metal reconnaissance aircraft ANT-3 (P-3), and the P.O. Sukhoi began designing the ANT-5 (I-4) fighter.

In March 1927, the concession with Junkers was liquidated, and the plant in Fili, after two years of inactivity, became part of Aviatrest under the name Plant No. 22. It began preparations for the release of A.N. Tupolev. Historiographer of Soviet aviation V.B. Shavrov notes that the Tupolev machines were rational, thoughtful, "not inferior in all respects to Junkers designs." Still would! It was from Junkers that they stole, developed and became domestic ideas. So, in a report addressed to People's Commissar of Defense K.E. Voroshilov reported:

"1) All the necessary drawings, materials, etc. were secretly seized from the Junkers plant.

2) A group of Russian engineers who previously worked for Junkers, based on these materials and their experience, developed the organization of production, templates, machine tools, a card system for accounting and passing orders, etc. on the basis of these materials and their experience. The group of engineers was engaged in this development for several months. The results of this development were partly used in the repair of Yu-20, Yu-21 and Yu-13 and in the production of TsAGI scouts at plant No. 5.

The TsAGI reconnaissance officer is just ANT-3. Acquaintance with the German experience greatly facilitated the introduction of domestic aircraft made of duralumin into mass production. Working together with German specialists, Soviet workers got acquainted with the latest techniques for assembling aircraft, and engineers studied and mastered the most advanced technologies. They mastered it so well that three years later the Junkers company filed a lawsuit against TsAGI, trying to defend their copyrights on the design and production method of the metal wing. Of course, the Germans did not receive any satisfaction for their claims. Firstly, the Soviet monoplane with a thick profile wing and corrugated skin was built "before G. Junkers received patents for such a design in the USSR." Secondly, A.N. Tupolev was forced to adapt someone else's technology to the capabilities of the domestic industry and thus created the "original wing design." The originality, for example, lay in the fact that at Junkers the wing was docked to the center section with the help of union nuts, and Andrei Nikolaevich used cone bolts for this.

In fact, TsAGI could not boast of its own achievements at that time. In the "Report on experimental construction", prepared by Aviatrest in October 1927, it was said about the activities of the institute:

"This institute has given almost nothing to our industry during its existence. For 7 years from the date of foundation, TsAGI was mainly engaged in the construction of new laboratories, buildings, etc.; in relation to scientific work, there were a number of initiative works that were of interest to individual heads of departments, while TsAGI often remained deaf to the demands of industry.

From the practical work of TsAGI, we can note the release of an album of a series of screws, which is not the result of our own experiments, but the processing of American tests; then calculated norms were developed (also processing of foreign, mainly American norms). In the absence of standard calculation methods, in the absence of albums of aerodynamic blowdowns, in the absence of theoretical research that is currently of interest to the aircraft industry, especially its experimental construction branch, factory workers could only use information from foreign literature, which caused an unnecessary waste of time and money (so, for example, in the GAZ Experimental Department No. 1, an information section is organized that processes foreign literature, although this work would be closer to TsAGI).

Of the vital departments of TsAGI, it should be noted the aircraft building department, which produced several metal aircraft. But, in essence, this work on experimental aircraft construction should not be the work of a scientific institute ... "

According to the last point, A.N. Tupolev had his own opinion: all experimental aircraft construction should be concentrated in

single, equipped with the latest technology, scientific center. By this time, a large closed-type wind tunnel T-1-2, built under the direction of A.M., began to function at TsAGI. Cheremukhin. It had two working sections (Zmi b m), at the time of construction it was considered the largest in the world and, due to "significant difficulties with metals, their assortment and sheet materials", was made of wood and plywood.

The R-3 aircraft, put into production in the summer of 1927, was a two-seat single-pillar polutoraplan with a trihedral fuselage. The frame was assembled from chain-aluminum profiles, the outer skin was made from sheet corrugated chain-aluminum. The armament consisted of one synchronous machine gun for firing through the propeller and a twin turret in the rear cockpit, where the gunner-observer was located. Up to eight small bombs were attached to the outer suspension. Various types of engines were tried on the car: the American Liberty was replaced by the domestic M-5, the English Napier-Lion and the German VMU \ 1 were installed. In the end, they bought a hundred Lorraine-Dietrich engines with a capacity of 450 hp from the French. The new reconnaissance aircraft, which developed a maximum speed of 200 km / h, fully met the requirements of military aircraft. By the spring of 1929, 22 R-3 aircraft were transferred to the Air Force units (due to the "very rear centering", radio equipment and defensive weapons were not mounted on them) and 79 R-ZLD aircraft. The I-4 fighter is a single-seat all-metal strut wing-and-a-half wing with an air-cooled engine of French origin Gnome-Rhone-Jupiter-GU with a power of 420 hp. developed a speed of 250 km / h and during the tests was recognized as a machine that in all respects is not inferior to the best fighters in the world. True, as V.B. Shavrov: "The flight qualities of production aircraft were lower than those of experimental and lead aircraft, and the aircraft could no longer be considered among the advanced ones. The use of corrugated skin, protruding ribs and stringers, the absence of fairings at the ends of the struts and even on the spokes of the wheels gave a lot of resistance, which was very sensitive for the small size of the aircraft. In addition, in the I-4 series, it turned out to be almost 1000 kg heavier than the ANT-5, which had a take-off weight of 1343 kg. Even with the new "Jupiter- \ T" in 480 "horses", the maximum speed of the fighter did not exceed 230 km / h, the ceiling - 7000 m. 1927 (with smooth duralumin skin and wheels without spokes) flew at a speed of 270 km / h and had a working ceiling of over 9000 m. The British Hawker Fury in 1929 squeezed 350 km / h. Nevertheless, the I-4 was produced in different versions from 1928 to 1933. In five years, about 400 cars were built.

The heavy twin-engine all-metal monoplane ANT-4 with Napier-Lion engines with a take-off weight of 6712 kg had a maximum speed of 214 km / h and a practical ceiling of 4830 m. For mass production under the TB-1 brand, 12-cylinder liquid-cooled engines were installed on the aircraft VMM \ M UP with a rated power of 500 hp The bomber had a crew of six, was equipped with three machine-gun sparks, the bomb load was 1000 kg, the flight range was 1000 km.



TB-1 was a landmark machine, the prototype of all subsequent

multi-engine cantilever monoplane bombers. In total, the Soviet Air Force received 218 copies of the TB-1, which were in service until 1936.

According to the classification that arose in those years, heavy bombers were called "airships". To accompany them, military theory demanded that the Air Force have multi-purpose "air cruisers". Therefore, in parallel, the AGOS TsAGI design bureau designed and built "an aircraft for long-range reconnaissance, bomber escort and air combat" - R-6 (ANT-7). It was a reduced copy of the TB-1 bomber. The speed of the car increased by more than 50 km / h at the same range. The crew consisted of four people, including one gunner in a tilting turret that was pulled down, by the way, borrowed from Junkers, who used it on Yug-1. Armament - five machine guns.

In the office of N.N. Polikarpov, who became the chief designer of the Land Aircraft Department of the Central Design Bureau of Aviatrest, in 1927-1928 the I-3 fighter, the R-5 multi-purpose aircraft and the legendary U-2 "heavenly slug" were created. I-3 was a wooden polutoraplan with wings of different spans, with a VMM / UT engine. Developing a speed of up to 283 km / h, he had good maneuverability and fairly high flight and combat qualities. The Soviet Air Force received about 400 of these aircraft.

Double reconnaissance R-5 - enlarged I-3, which developed a speed of 230 km / h, had a ceiling of 5900 m, a flight range of 1000 km, armament - two machine guns. In the attack version, the aircraft was equipped with seven machine guns and carried up to 300 kg of bombs. The excellent machine was built at plant number-1 in large series (6826 copies in total) in various modifications and was in service until 1944.

In addition, in 1927, in order to acquire the latest aviation technology, the Air Force Directorate transferred the technical requirements for the development of a single-seat fighter for the USSR to Ernst Heinkel. In the summer of the following year, the aircraft, designated NO-37, was delivered to Moscow. It was a biplane with a ground speed of 300 km / h, with a steel tube fuselage, a wooden wing and canvas covering. According to the test results of Ya.I. Alksnis reported to the Deputy Chairman of the RVS I.S. Unshlikhtu:

"In terms of flight qualities and maneuverability, the NO-37 aircraft leaves far behind the aircraft supplied by the UVVS - Fokker DX! - Hispano-Suiza Z00NR, I-2 and I-2 bis - M5 and above built experimental aircraft I-3 - VMM / UMC and I-4 - Jup. UT".

In the autumn of 1929, 150 thousand marks were forfeited for the right to build such a wonderful machine and provide technical assistance to the Heinkel company. It was decided to build a new fighter under the designation I-7 at factory No. 1. While the NO-37 tests were going on, N.N. Polikarpov was instructed to create his own fighter with a welded metal frame. And they even planned a designer's business trip to Heinkel's factories "to clarify all issues related to obtaining technical assistance for welded aircraft."

Only the Department of Naval Experimental Aircraft Construction, which since 1925 was headed by D.P., did not please with success. Grigorovich.

The department was engaged in the design of domestic seaplanes, but for three years of work it was not able to present a machine suitable for adoption. At one of the meetings of the Politburo I.S. Unshlikht stated:

"The situation is much worse in the field of hydroplane construction, since all the hydraulic machines that have come out of our pilot construction so far have turned out to be unsuccessful and unsatisfactory in terms of their requirements."

The Aviatrust memorandum on this matter stated:

"We are terribly poor in the field of hydroaviation. They are poor not only in the material sense (we have a meager number of seaplanes), but also even poorer:

a) in theoretical knowledge (almost nothing was worked out and published on hydrodynamics and hydroaviation);

b) in the design experience in hydroplane building (very few boats were built);

c) materials for the water part of wooden seaplanes (waterproof glue, waterproof plywood, varnishes and coatings);

d) production knowledge;

e) production capabilities (factories and hydromotors).

To solve the problem in August 1928, the aircraft designer Paul Richard was discharged from France. At factory No. 28, an OPO-4 department was formed, to which specialists and all the experimental aircraft of Grigorovich, who was suspended from work, were transferred. In the new bureau, the future general designers N.I. Kamov, M.I. Gurevich, S.P. Korolev, I.V. Chetverikov, G.M. Beriev, S.A. Lavochkin. Initially, Richard had a big program to create a dozen different machines. Then it was gradually reduced and only TOM-1, an open sea torpedo bomber, was brought to the construction of a prototype. However, he did not go into the series either. Richard drove off to his homeland, and flying boats still had to be bought abroad. Following the float "Junkers", aircraft of the Italian company "Savoie", German "Dornier" and "Heinkel" were purchased, some of which were redesigned and built at domestic factories under the brands MBR-4 and KR-1.

All Soviet aircraft were originally equipped with British Lewis and Vickers machine guns. In 1928, by order of the Revolutionary Military Council, the 7.62-mm aircraft machine gun PV-1 was adopted by the Red Army Air Force, which was a modification of the Maxim machine gun, carried out according to the project of the pilot and inventor A.V. Nadashkevich. The PV-1 weighed 14.5 kg, had a rate of fire of 750 rounds per minute and an initial bullet speed of 865 m/s. In all respects, it was the same Vickers - and its "dad" was Maxim - transferred from a water to an air cooling system. Soviet study by D.N.

Bolotina reports that, nevertheless, "our system" was superior to the British one, since a buffer spring was introduced in it to increase the rate of fire, "which imparted additional speed to the mobile system when it moved forward and took on the blow when it retreated." And this buffer spring was "a novelty that has not yet been used in the creation of machine guns in foreign practice. Another thing is interesting: a modern Russian author repeats the praises of the PV-1 word for word, completely forgetting that the magpie

pages earlier he himself stated that "the rate of fire of Vickers machine guns increased ... due to the strengthening of the buffer springs, which sharply increase the speed of the moving parts when firing."

For turrets to replace the Lewis, a 7.62-mm Degtyarev aircraft machine gun was developed, obtained by altering the DP infantry machine gun. The rate of fire of the DA was 600 rds / min, the muzzle velocity was 840 m / s. Ammunition was fed from a three-row magazine with a capacity of 63 rounds. Machine gun weight - 11.5 kg. Two years later, the DA-2, a system of two Degtyarev machine guns connected together, entered service. With equipped magazines, sparka weighed 25 kg.

In 1927, the Red Air Fleet had 698 combat aircraft - unacceptably few. After all, according to the doctrine, it was necessary to fight with the entire "external environment". In connection with the "military alarm" M.N. Tukhachevsky reported to the Council of Labor and Defense: "Neither the Red Army nor the country is ready for war." Therefore, speaking at the XV Congress of the RCP (b), People's Commissar K.E. Voroshilov formulated the tasks of industry as follows: "The five-year plan for the national economy should proceed from the inevitability of a military attack on the USSR and, consequently, from the need to measure the material resources of such an organization of the defense of the Soviet Union, which would provide a victorious rebuff to the combined forces of our potential opponents."

What were all the immediate neighbors on the western, southern and eastern borders - from Finland to Japan. It had to be taken into account that this was only the first echelon of world imperialism. The capitalists of England and France dreamed of taking part in the second.

The resolution of the Politburo of the Central Committee of the RCP (b) "On the state of defense of the USSR" of July 15, 1929 stated that "the technical base of the armed forces is still very weak and far behind the technology of modern bourgeois armies." According to the decree, by the end of the first five-year plan, the air force was to have at least 3,500 aircraft. It was pointed out to the military department that the Red Army was obliged "in terms of numbers - not to be inferior to our potential opponents in the main theater of war, in terms of technology - to be stronger than the enemy in two or three decisive types, namely, in the air fleet, artillery and tanks." In response, the military presented the S-30 mobilization plan, according to which the needs of the army in case of war by the beginning of 1932 were determined at 7,000 aircraft.

On October 20, 1929, the Air Force Administration sent its proposals to the STO "On a five-year plan for the experimental construction of the Air Force for 1928/1929 - 1932/1933." The document noted that the Department's specialists studied 675 types of aircraft of foreign designs, of which 62 types were selected as samples in pilot production. The military asked for more

appropriations for studying foreign experience and providing financial support to TsAGI and NAMI.

By this time, a number of quite modern models of aviation equipment had been created in the USSR. However, the existing factories could not meet the growing demand. Serial aircraft were built at four aircraft factories, besides, "the quality side of the manufactured products clearly lagged behind the requirements of the time." Thus, by September 20, 1929, factory number 22 provided only 32 of the 70 ordered fighters.

I-4, and military acceptance accepted only two.

The introduction of new samples into the series was slowly moving forward. The industry continued to produce the rapidly obsolete P-1, which then accounted for up to 50-60% of all products. There was a lack of industrial enterprises, their poor technical equipment, and a lack of engineering and skilled workers.

It took a year and a half to hand over a hundred R-3 aircraft, after which they were taken out of production and replaced in the series with the Polikarpov R-5 reconnaissance aircraft.

If it took nine months to create and build a prototype TB-1, then it took four years to organize mass production. However, here the story is more interesting. Initially, Tupolev made a remote-controlled projectile, and it was ordered not by the Scientific and Technical Committee of the Air Force, but by the Special Technical Bureau for Military Inventions for Special Purposes (Ostekhbyuro) to implement the congenial idea of the self-taught inventor V.I. Bekauri: an aircraft stuffed with explosives took off in the traditional way, followed to the target, on approach the pilot was thrown out by parachute, and the aircraft, controlled with the HELP of a "telemechanical system" by an operator from another aircraft, fell on the target. Therefore, the lead ANT-4 was single-seat and did not have any weapons. He became a "medium bomb carrier" only two years later. In addition, in practice, the construction of all-metal giants turned out to be somewhat more difficult than it seemed at first. The introduction of the TB-1 was so delayed that aviation circles considered the issue of copying the French Farman-62 Goliath bomber under the TB-2 index, especially since it was already in service with the Red Air Fleet in the "import version" and proved to be quite good at pacification of the Chechen villages.

In total, in 1928-1929, out of 985 ordered aircraft, the industry was able to issue only 30 TB-1s, 14 I-3s, and a few R-5s.

Engines for them still had to be bought abroad, since neither the design bureau created under Aviatrest for experimental engine building, headed by A.A. Bessonov, nor the Department of Aircraft Engines of NAMI under the leadership of A.A. Mikulin, nor the designers of the Ikar and Motor factories, merged in 1927 into Plant No. 24 named after M.V. Frunze, for five years of work, they could not offer anything suitable.

The country's best technicians dismantled dozens of foreign samples to the last screw, drew something of their own on newsprint (with whatman paper) that surpassed world analogues in all

parameters, and embodied it in metal - M-8, M-9, M-12, M-13, M-14, M-15, M-18, M-19, M-23, M-26, M-27...

Turning it on doesn't work!

So, the Polikarpov machines I-3 and R-5 were originally supposed to be equipped with the M-13 engine, which was developed by engineers N.R. Brilling and A.A. Mikulin. However, all three prototypes of the motor fell apart during tests three minutes after launch, without gaining the promised power of 800 hp; the planes had to install a "weak" and heavy

"German". Engines A.A. Bessonov - 18-cylinder M-18, in-line M-19 with a driven centrifugal supercharger - seemed to work, but "for various reasons they did not go into the series." M-15 and M-26 were still "published" for a short time in small batches, but turned out to be unreliable even by Soviet standards; M-27 is obsolete even before it was

made.

The only achievement of domestic engine building was the 100-strong five-cylinder engine M-11 launched into series in 1928 (phase development of the GAZ-4 design bureau, suspiciously similar to the French Lorrain-Dietrich 5Pb).

In the meantime, by 1930, Zaporizhzhya Plant No. 29 (formerly GAZ No. 6) had mastered the production of the French Jupiter-IV under the Soviet brand M-22, and plant No. 26 in Rybinsk (the former Russian Renault) - the serial production of the German VMM / UT engine, which received the designation M-17. Regarding the last People's Commissar K.E. Voroshilov anxiously informed I.V. Stalin:

"October 14, 1927, at our insistence and choice, Aviatrust concluded a license agreement for installations for our production of a modern BMW-UG engine that left the experimental stage at the beginning of 1926. More than 2 years have passed; but we have not yet received a single serial motor from Aviatrust; the other day only a small series of 10 motors was presented for delivery. In addition, the most important parts - the crankshaft, rollers (bearings) - are not at all represented in our production, we buy them in Germany and only from August 1929 Aviatrust receives technical assistance from Krupp from them. Also, the production of magneto has not yet been delivered ... The latest in 1927, the BMW-UG engine, in the process of being put into production for 2 years, runs the risk of becoming obsolete before we supply it to the modern fleet.

The leading experts of the aviation industry wrote about the same to Iosif Vissarionovich on August 13, 1930: "It is known that in all 13 years we have not created a single finished aircraft engine that would be on our aircraft. For all the time in the Union, more than 40 aircraft engines were designed by different organizations, 30 of them were put into production, about 15 were built, but not one of them is and probably will not be on aircraft ... Our pilot construction is extremely fruitless " .

Of the ten engines of the 1931 plan, four were actually built, and only one reached mass production.

Yes, and the epic with VMM / dragged on for a long time, although one of the important reasons

his purchase was the opinion of Aviatrest specialists that: "This motor in production will provide less difficulty than any other." The contract with the firm came into force in October 1927. Drawings, technical descriptions, calculations, technological instructions, special tools, equipment, sets of all the most complex parts, crankshafts, gasoline pumps, electrical equipment, as well as about a hundred German engineers and workers were sent from Germany to Rybinsk. The carburetors were set by the French type "Zenith" 600ÿ]], which received a Soviet residence permit under the pseudonym K-17.

Plant No. 26 produced the first M-17s only in the spring of 1930, by the end of the year - 165 copies, then - incrementally.

The only difference is that, unlike the German "boomer", our M-17, having left the assembly line, was unsuitable for operation, and was sent

for special revision at the Central Aircraft Engine Institute. As noted at the All-Army Conference on the Quality of Aviation Products, the motor had 76 defects. At the same time, due to the violation of technology and the poor quality of the materials used, it gave out a lot of power and was heavier than the prototype by an average of 30 kg. Casting defects reached 50%, every tenth of the engines accepted by the customer was of "lower condition", that is, it was suitable only as training aids or for transfer to civil aviation, whose needs were satisfied on a residual basis. In January 1930, the Labor and Defense Council instructed Plant No. 24 to also master the M-17. A set of drawings was transferred to Moscow, but the Germans were not transferred. At the factory, they thought over the drawings and decided to simplify and improve the design. As a result, 30 "substandard" engines were manufactured, in which not a single piston was like another, after which production was curtailed.

Head of the Red Army Air Force Ya.I. Alksnis reported to the Revolutionary Military Council in July 1932: "The quality of the M-17 engines has dropped so much that every off-aerodrome flight on this engine begins to pose a serious risk not to return, but to have an emergency landing with all the ensuing consequences." It took another year for the Rybinsk plant to significantly improve the quality of its products, bring the engine life up to 150 hours and achieve maximum productivity.

Relatively simple, reliable, well mastered in production and operation, running on low-quality domestic fuel, standing on the stream until 1939, the M-17 became the most massive aviation (and tank) engine, replicated in the amount of 27,534 copies.

On July 31, 1930, Deputy Commissar of the Military Sea I.P. Uborevich reported to the Politburo that the plan for the military order for industry was being fulfilled by barely 10-15%. Of course, there was no harm done here. Red people's commissars and directors categorically did not want to sign for voluntarism and their own illiteracy. The liberated proletarians, who became the "leading class", could not, by definition, spoil their native authorities. This means that the "caste of old specialists of tsarist Russia", who maliciously sabotaged the program of socialist industrialization, was to blame for the disruption of all plans.

It turned out that every third engineer, especially those who received a pre-revolutionary education, and even more so a non-proletarian

origin - a pest. Instead of Germany, the son of a "clergyman", who did not hesitate to wear a family Orthodox cross around his neck, N.N. Polikarpov ended up in Butyrskaya prison. During the investigation, he was reminded of a lot, including the fact that when testing his "wrecking" design 2I-N1, the crew of pilot V.N. Filippova. With the naked eye, "sabotage" was visible in the scheme of the Polikarpov I-1 (IL-400) fighter - a monoplane: the criminal intent was that in the event of a nose-over of the car, the "red falcons" would hit their heads on the ground, losing their health and professional skills - that's you and undermine the defense. In addition, Polikarpov sabotaged the fulfillment, to put it mildly, of a wonderful order for the design of a two-seat small-sized aircraft "cavalry service" in long-range raids OK-1. It was assumed that this apparatus with folded wings would be dragged by the tail through the valleys and over the hills

cavalry cart; if necessary, the design was to be brought into flight readiness in 15-20 minutes.

Nikolai Nikolaevich did not resist for long, admitted his participation in the preparation of foreign intervention, and without trial was sentenced by the OGPU board to be shot as a spy and a "socially alien element." In the neighboring cells, other "saboteurs" were waiting for "fair revolutionary retribution": the author of the first serial fighter D.P. Grigorovich, employees of his seaplane department V.L. Corbin-Kerber, E.I. Majoranov, A.N. Sedelnikov, N.G. Mikhelson, the creator of the aviation machine gun A.V. Nadashkevich, engine builders N.R. Brilling, B.S. Stechkin, A.A. Bessonov, A.D. Charomsky, designers V.A. Tisov, I.M. Kostkin, V.V. Kalinin, statistical testing engineer P.M. Crayson and others.

But someone had to make fighter jets. Therefore, in an order signed by the Chairman of the Supreme Economic Council of the USSR V.V. Kuibyshev and Deputy Chairman of the OGPU G.G. Yagoda was instructed: "The organs of the OGPU should take all measures to ensure that wrecking engineers are used in the correction of sabotage."

In December 1929, a group of prisoners numbering about 20 people, led by Grigorovich and Polikarpov, were offered to prove their devotion to the Soviet Motherland by deed and, within three months, create a fighter aircraft that would surpass similar machines of potential enemies. Drawing boards were placed in two cells of the Butyrskaya prison, pencils were brought in and they called it the Special Design Bureau.

As brilliantly formulated by G.G. Yagoda: "Only working conditions in a militarized environment can ensure the secrecy and effective activities of specialists as opposed to the corrupting environment of civilian institutions."

In January 1930, the design bureau (soon renamed TsKB-39) was relocated to a guarded hangar on the territory of plant No. 39 named after V.R. Menzhinsky. The process, as they say, has begun.

Already in April, the prototype of the fighter, which went down in history under the name BT-11, "inner prison, model 11" (or otherwise "pests to workers"), took off from the takeoff field of the Central Airfield. The tests went extremely smoothly, the biplane, which received the I-5 index, was launched into a series with the M-22 engine and built at factories No. 1, No. 39, No. 21 until the end of 1934 (this is all the more surprising,

that the security officers obsessed with secrecy forbade the "saboteurs" to carry out blowing models and other types of tests in institutions and laboratories outside their jurisdiction).

"Rodina" highly appreciated the merits of Grigorovich, Polikarpov and other prisoners of the inner prison: "former pests who repented of their previous deeds" were provided with a special ration in a special canteen, they were allowed to walk in a special kindergarten, they were allowed to see their wives and children once a week, and, finally, unescorted. True, not all and not immediately. For example, N.N. In March 1931, Polikarpov was replaced by execution with ten years in the camps, then in June the OGPU board decided to consider the sentence suspended, and finally, in July, a group of convicted designers, including Polikarpov, was amnestied by a decree of the Central Executive Committee of the USSR. They had to work at the same place, at the Central Design Bureau of Plant No. 39.

The Chekists considered the experiment with the "militarization" of engineering

successful and, in order to provide the aviation industry with new promising models in the shortest possible time, they decided to concentrate the work of experimental aircraft building in their sterile, cologne-smelling hands. As a result, the merger of TsKB-39 and the TsAGI design department into a single design organization under the general control of vigilant authorities soon followed.

The main core of the Central Design Bureau were designers and calculators from the teams of Grigorovich, Polikarpov, the Richard group, as well as replenishment from other factories. The number of designers was increased due to civilian specialists, among whom were A.S. Yakovlev, V.B. Shavrov, A.N. Rafaelianz. The staff of TsKB-39, which became part of the Technical Department of the Economic Directorate of the OGPU, was about 300 people. The draft designs of the aircraft were made in the general views department, after which they were considered and approved by the decisive authority - the Technical Council of the Central Design Bureau. Further drawings were developed by the design department. In parallel, groups and departments worked on aerodynamics, strength, models and layouts, drawing control, weapons, naval aircraft, production preparation, static and flight tests. V.B. Shavrov recalled:

"The GPU, which had planted many engineering and technical workers of the older generation, decided to take over the pilot construction of aircraft. Like, in this situation, there will be no sabotage. The head of the Central Design Bureau was a two-rhombus hepeust, above it was a three-rhombus, and above this - a four-rhombus. Above - Yagoda, and above Yagoda - Menzhinsky. There were also lower ranks.

The GPU decided to gather at the plant number 39 all those who worked for Richard, Polikarpov, Bartini. And, above all, an extensive work plan for the Central Design Bureau was drawn up. And this plan was based on the following assumption: Tupolev has been building an experimental aircraft for four years, and we will build it in three weeks. We have three hundred people on staff, so we will throw everyone on one task in order to complete it quickly. The Central Design Bureau is a powerful organization that, having leaned heavily on any task, will be able to quickly complete it. The GPU was convinced that this would be the case.

Some of the people in the Central Clinical Hospital were free, and some were "arrested." We, the freemen, were subordinate to the latter, although they lived in custody and could not even leave the factory. The arrested were our bosses,



and above them - the GPU, which constantly interfered in everything.

In the fall of 1931, TsKB-39 was reorganized. Centralized design was replaced by a system of end-to-end teams specialized in aircraft classes. Brigades were formed: fighters (N.N. Polikarpov), reconnaissance aircraft (S.A. Kocherigin), long-range aircraft (P.O. Sukhoi), naval aircraft (I.I. Pogossky, I.V. Chetverikov), propeller devices (A.M. Izakson), weapons (A.V. Nadashkevich), propellers (V.L. Alexandrov), wheels and skis (A.I. Mashkevich), standards and normals (T.A. Dudukalov) and other. A little later, a long-range bomber brigade was formed (S.V. Ilyushin) and the Joint Bureau of Standards (OSSA).

There were many objects in the work plan of TsKB-39. However, the hopes for the speedy release of new aircraft did not materialize. Design and construction did not go faster than before, the quality was not higher, and many objects were not started at all. For a year and a half of its existence, the Central Design Bureau produced two types of attack aircraft, a double

fighter DI-3, bomber TB-5, naval reconnaissance MDR-3 and a cannon fighter was launched. None of these products of prison creativity was ever adopted.

Again V.B. Shavrov:

"The system invented by the GPU has not justified itself. She was completely bankrupt. It turned out that no matter how much you throw people at one thing, it will not go faster from this. If, for example, there are thirty pairs of ribs of different sizes on an airplane, this does not mean that these ribs can be made in two days ... After all, someone usually calculates the wing. Yes, and any aircraft unit is made by a limited number of people, and if their number is increased, then there will be little use from this. The GPU did not understand this simple truth, but at the very first construction of the TSh attack aircraft, this system fully revealed its shortcomings. For six months everything was in a stormy movement: pressure from above, overtime, but no results. The work proceeded exactly as if normal work were being done on this machine."

According to A.S. Yakovleva: "The organization was crowded and stupid, the costs were high, and the return was weak."

In January 1932, the division of TsAGI and the Central Design Bureau took place, and a year later, the head of the Main Directorate of the Aviation Industry, P.I. Baranov signed an order to organize a new Central Design Bureau on the basis of aircraft plant No. 39. S.V. was appointed head of the Central Design Bureau, which has six design teams. Ilyushin.

Engine designers, concurrently prominent members of the "Industrial Party", A.A. Bessonov, N.R. Briling, B.S. Stechkin, N.N. Bobrov was also lucky: instead of a ticket to Solovki for a period of three years, they were offered to "redeem the guilt before the working people" at the Special Technical Bureau of the OGPU, located in the center of Moscow at plant No. 24. There they created a number of "progressive" motors that received the names of the most titled executioners - a thousand-horsepower aviation FED-8 ("Felix Edmundovich Dzerzhinsky"), an engine for a submarine YaGG ("Yagoda Genrikh Grigorievich"), an automobile diesel engine KOJU ("Koba Dzhugashvili") - which were never useful to anyone.

By the beginning of the second five-year plan in the Soviet Union, enterprises

reconstructed during the years of the first five-year plan, increased the pace of production; in parallel, new aircraft factories were put into operation. So, in 1931, plant No. 19 named after Stalin in Perm and plant No. 16 in Voronezh, which were designed for the production of air-cooled engines, took place, and in 1932 - No. 27 in Kazan for the production of liquid-cooled engines and aircraft plant No. 125 in Irkutsk. Plant No. 21 in Gorky began to produce products. To meet the growing needs of the Soviet aircraft industry in special design materials made of aluminum and its alloys, an appropriate metallurgical base was created. For example, in 1933, near Moscow, the construction of plant No. 95 for the production of aluminum pipes, sheets, profiles, etc. was completed. In January 1932, after the abolition of the Supreme Economic Council of the USSR, military plants were transferred to the administrations and trusts of the People's Commissariat of Heavy Industry. At that time, Glavaviaprom included 17 factories, of which seven aircraft were produced. Aircraft factories No. 18 in Voronezh and No. 81 in Tushino were built.

Thus, a base was created for the construction of their own aircraft. At the beginning of 1933, the leadership of the Air Force approved the development plan

experimental aircraft construction for 1933-1934, the implementation of which was supposed to lead to a qualitative leap in domestic aviation technology. During these years, it was supposed to create new bombers with ten engines and a twin-engine K-1 at PAGI, in the GU GVF system - a Kh-1 bomber with two or three engines, at the Kalinin Design Bureau - a twin-engine VS-2. The task for the new I-13, I-14 fighters was issued by TsAGI, and for the I-15, DI-6 - by the Central Design Bureau. The plan provided for the creation of reconnaissance and attack aircraft LR, TSh-3, the U-3 training vehicle, gyroplanes, a helicopter, a jet-powered aircraft, and so on.

Despite the creation of its own industrial base, dependence on the West continued to persist. There was a shortage of qualified personnel, there were no materials necessary for aircraft construction in the required quantities, not all technological and production processes were sufficiently mastered. The lack of domestic engines mastered in production and tested in operation limited the launch of new models of aviation equipment into mass production. The resolution of the Revolutionary Military Council of the USSR noted:

"While almost all foreign air fleets have already switched to high-altitude engines, which sharply increase the speed of the aircraft at high altitudes, its rate of climb and practical ceiling, our industry has not yet produced a single engine with a supercharger, even in a prototype for state tests. ...»

Most of the combat aircraft produced were of poor quality.

Soviet engine engineers continued to play "constructor": they thoughtfully dismantled foreign samples and assembled domestic ones from them. In 1930-1935, aircraft engines M-30, M-31, M-32, M-37, M-38, M-41 were tested (any of the six listed aircraft designers were ready to take for the new I-9 and I-10 fighters, but "the engines did not come out by the deadline", and the aircraft were not built), M-44, M-56, M-58 ...

Everything turned out at the world level, even better. You just turn it on and it doesn't work. The only achievement of domestic engine building was the M-11 motor, a thing, no doubt, necessary, but suitable only for devices of the "corn" type.

It became clear that one cannot fully rely on one's own industry, especially when it comes to high technologies and new designs. Therefore, in the spring of 1933, samples of the latest inventions in the field of television, telemechanics and radio were purchased from the German firms Telefunken, Siemens and Fernsee for the needs of the air force: a television set for an aircraft, 6 sets of aircraft transceiver radio stations for bomber attack and reconnaissance aircraft, 6 sets of radio stations for fighter aircraft, 10 sets of instruments for night flights, 2 sets of airfield and aircraft radio stations.

Two delegations went at once to acquire licenses for the production of modern aircraft engines (along with technological documentation, necessary machine and tool equipment). One, headed by the future chief designer of the Rybinsk plant V.Ya. Klimov bought from three French firms six

aircraft motors. Another, under the leadership of the head of CIAM I.I. Poberezhsky, got acquainted in America with Curtis-Wright engines.

The tour in France ended with the acquisition of a license for a Hispano-Suiza liquid-cooled motor of \$12.00. Its release under the index M-100 was entrusted to plant No. 26. And before that, in Rybinsk they were going to organize the assembly of American Curtis \ U-1800 Conqueror engines. Considerable sums in hard currency were spent on the reconstruction of the plant, the purchase of a license, tools and fixtures necessary for the development of the "American". Under the "Conqueror" in TsAGI, the I-8 fighter (ANT-13) was already built, which showed a speed of 310 km / h in tests - a record for the USSR. The new Kremlin thought and decided: we will still introduce the "Frenchman". And they allocated new appropriations - for machine tools, equipment, special tools, I-8, due to the lack of an engine, "had no continuation." In addition, for the development of plant No. 29, they bought an outstanding engine from the Gnome-Ron company - a two-row 14-cylinder star Mistral-Major 14Kag \$ with a take-off power of 850 hp.

(An interesting story happened at the end of 1938. After the occupation of Czechoslovakia by German troops, the French, having assessed the deplorable results of the "appeasement policy", realized it and decided to qualitatively improve their aircraft fleet, and at the same time double its quantity. Three concerns at once received large orders from the Ministry of Aviation for production of a modern M5 \$ -406 fighter, but almost immediately it became clear that the engine for it - Hispano-Suiza 12U - produces a single plant that physically cannot provide for everyone. In search of a solution to the problem, French officials knocked on the door of the Soviet trade mission and asked to sell at least 200 engines of the "Rybinsk brand." Stalin refused.)

As a result of a trip to the United States, the General Directorate of the Aviation Industry acquired in 1933 150 Wright "Cyclone" V-1820 E-3 star-shaped nine-cylinder engines with a nominal

625 hp and weighing 435 kg. Most of them were sent to the troops, and a few copies were sent to the brand new Perm plant, equipped with the latest technology, where, through the efforts of chief engineer A.D. Shvetsov, with the technical assistance of American specialists and on American equipment, the production of the M-25 engine was launched in 1934.

By the end of 1933, a number of new types of aircraft were created in the USSR. The soloists were the designers N.N. Polikarpov and A.N. Tupolev. The team led by A.N. Tupolev, who had a solid backlog in the form of the TB-1 all-metal bomber and the R-6 multi-purpose aircraft, began designing aircraft with flight weights of 20, 30 and 40 tons. The first in a series of super-heavy machines was the TB-Z (ANT-6). By the way, it was also built by order of Bekauri and at the expense of Ostekhbyuro, as a "special-purpose aircraft cruiser" capable of carrying mines, anti-submarine bombs, 20-inch radio-controlled torpedoes with a spiral course and transporting loads on an external sling with a total weight of at least 2000 kg. The prototype took off on December 22, 1930. According to the test results of the Air Force Research Institute, it was concluded: "The aircraft ... according to its flight data is a completely modern heavy bomber, standing on a par with the best

foreign aircraft. The ANT-6 with M-17 engines was recommended for mass production, which began in the spring of 1932 at Factory No. 22, and then at Factory No. 39.

The bomber was an enlarged version of the TB-1, made of corrugated aluminum mail, with four engines, a flight weight of 17,400 kg and a wingspan of almost 40 m. The maximum speed was 197 km / h, the practical ceiling was 3800 m, the radius of action was 1350 km. In the series, the glider turned out to be 10-12% heavier (respectively, 20 km / h slower), the discrepancy in weight between individual machines reached tens, and sometimes hundreds of kilograms:

"The reasons were mainly the greater thickness of the sheets and pipes due to the inevitable positive tolerances, the addition of equipment and weapons with their fasteners, the addition of structural components related to the needs of operation (brackets, partitions, seats, steps). It was found that many electrical wires have a section that is much larger than required by the current strength, that the welds are rough, and the chassis carts are unreasonably heavy. Experimental aircraft went to the airfield covered with a thin layer of varnish, and in the series their protective coloring was done very roughly with a spray gun, the layer of varnish and paint was thick. On experimental aircraft, everything was made cleaner. In cases of replacing XMA steel with mild steel grade M, the thickness increased accordingly. In addition, the wing mounting brackets were made in place, and the docking bolts were non-standard in length and diameter, poor fitting of the aircraft parts and careless processing of the joints, careless riveting and undertightening of the bolts, cracks and dents in the skin were noted. Each bomber was "individual", and similar parts from one aircraft did not fit another. During operation, water radiators collapsed, pipelines broke and flowed, fuel tanks crawled at the seams, paint swelled and flew around in tatters. In a word, the assembly technology in terms of level clearly did not correspond to the complexity of the advanced design.

The aircraft was equipped with retractable rotating towers in the center section, cluster and beam-type bomb racks for 3000 kg of various bombs weighing up to 1000 kg and radio equipment. Small arms - Tour-6 turret with a single or twin DA machine gun in the nose of the fuselage, two wing turrets with one DA, rollable Tur-5 turrets behind the wing with one or two DA. Ammunition - 100 disks of 63 rounds. The crew consisted of eight people: the commander of the ship, the second pilot, the navigator-scorer, two air gunners, a senior technician (mechanic), two junior technicians - they are also shooters in the towers.

True, on the first serial machines, much of the above equipment was absent: there were not enough sights, bomb racks, machine guns, and the production of radio stations was just being adjusted. Therefore, the planes were handed over to the troops "conditionally" - under a letter of guarantee from the plant with a promise to send everything missing as they arrived. As of January 1, 1933, 144 TB-3s were in service with the Air Force, and another 307 were produced during the year.

On the ground, the airship was serviced by 5 mechanics. Refueling only one gas tank with a capacity of 1950 liters took three and a half

hours, and there were four such gas tanks. It was necessary to pour 10-12 liters of water into the cooling system of each motor. For ground handling, it was planned to develop a series of specialized vehicles and trailers, but in practice, auxiliary equipment, as a rule, was absent. For example, "complete" with a bomber, to move the aircraft around the airfield, the Kommunar tractor relied. In real life, this task was solved by 40-50 Red Army men under the guidance of a senior technician.

The question of the need to modernize the TB-3Z arose almost immediately after testing the prototype. It was planned to replace the M-17 engines with more powerful ones, to strengthen the bomber and defensive small arms. Increased aircraft strength, flight speed and ceiling.

By this time, at the Central Institute of Aviation Motors, the team of A.A. Mikulina brought and introduced into mass production at the Moscow plant No. 24 the first, truly domestic liquid-cooled engine M-34, created on the basis of the VMM / UG. I confess how the M-34 was fundamentally different from the "dad", I still didn't figure it out: the same dimensions, the same 12 cylinders of the same diameter, the same piston stroke and camber angle. Unless in the Mikulin engine "cylinder blocks, the upper and lower half of the crankcase were pulled together by pins into a single power circuit, free from the action of tensile forces", and the entire "original" design was "subordinate to the idea of rigidity". At the same time, the dry weight increased from 540 kg to 6770 kg, and the rated power from 500 hp. up to 750 hp

For the creation of the M-34 A.A. Mikulin was awarded a personal car and appointed chief designer of plant No. 24, and the engine was henceforth ordered to be called AM-34.

Tests showed that with the new engines, the bomber had a better rate of climb, but the maximum speed unexpectedly decreased. In September 1933, geared M-34Rs with new propellers with a diameter of 4.4 m were installed on the TB-3. In addition, the tail section was changed,

where another firing point was installed. After testing, the TB-3 - 4M-34R variant was accepted for serial construction as a standard for 1934. Despite the increased flight weight, the flight characteristics of the aircraft have improved.

Specialists of the Ostekhbyuro stubbornly and unsuccessfully tried to convert some of the machines into telemechanical ones. Only this time, flying up to the target, the pilot of the "air fire-ship" was not thrown out with a parachute, but was transplanted into a fighter suspended under the belly of the TB. For projects

an enterprising and punchy Georgian who, before the revolution, designed safes and mechanical toys, illiterate "legendary commanders", fascinated by the prospects

telemechanical war, in which the enemy will be smashed by red teletanks, radio-controlled airplanes, armored trains, torpedo boats and "wave control" submarines, remote-guided torpedoes and floating mines, self-cocking machine guns, flamethrowers and gas-throwers, knocked out millions of gold rubles even in the most hungry times. The Ostekhbureau in Moscow and Leningrad was provided with laboratories and design offices with a powerful production and experimental base, workshops, factories, aircraft and hangars, a whole flotilla of ships, its own radio station and

own airfield, base near Sevastopol; there was an opportunity to involve any specialists in the work. The only pity is that in the war with the Germans, almost none of the brilliant inventions of V.I. Bekauri was not useful, and what was useful had no effect on the outcome of hostilities, except, perhaps, for special communications.

Work on the modernization of TB-Z continued in 1935: new M-34ARN engines (with centrifugal superchargers) with an HP 840 power were installed on the aircraft. During the last stage of improvement, the bomber was equipped with boosted M-34FRN engines (950 hp at an altitude of 5000 m), which made it possible to squeeze out 288 km / h, cantilever fuel tanks were introduced, underwing towers were replaced with a "dagger" installation in the fuselage hatch, improved local aerodynamics, made changes in the controls. In this form, serial production was completed in 1936-1937. Everything was taken from the car. To radically improve performance, it was necessary to switch to a new type of aircraft with smooth skin and retractable

landing gear flight.

We call TB-3 "the world's first cantilever monoplane bomber with engines installed in a row along the span in the wing toe." True, the first was the same Hugo Junkers. It was just that the Germans were forbidden to build military vehicles, and a cantilever all-metal monoplane 6 with four 800 hp engines installed in a row in a thick wing, which took off in November 1929, served as their passenger aircraft. But the Japanese, having bought a license for the Junkers C38, turned it into a full-fledged bomb carrier. It weighed 23,000 kg, flew at a speed of 200 km/h, had a flight range of 3,400 km, and a ceiling of 3,700 m. Armament consisted of 11 turret machine guns and 3,000 kg of bombs. Crew of 10 people. During 1931-1934 Mitsubishi